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ABSTRACT

The impact of the administrative climate, individualized instruction, and counseling to develop student internal control, was measured in this 1975 study against vocational program completion rates, individual locus of control expectancy, and academic outcomes of high risk students in developmental programs. All entering vocational students and a comparison group of students from other programs in each of four Texas community colleges classified as primarily vocational or primarily academic comprised the student sample, with a control group drawn from two other similar schools. Administrative and supervisory personnel formed a second subject group. Pre-test and post-test scores were gathered from standardized personality tests; other data included institutional measures and school records. Subjects from two schools received the full treatment of administrative intervention, counseling for internality, and individualized instruction; two schools received partial treatment of administrative intervention only; and two schools received no treatment. Results demonstrated that (1) intervention increased retention, particularly in the full treatment schools; (2) treatment did not effect grade point averages; (3) internality was affected by strong vocational programs; (4) counseling for internality was effective; and (5) gains in internality could not be used as indicators of gains in academic productivity. Instruments are appended. (RT)

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FINAL REPORT

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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IMPACT OF ADMINISTRATIVE CLIMATE, INSTRUCTION, AND COUNSELING ON CONTROL EXPECTANCY, ANXIETY AND COMPLETION RATE OF POST-SECONDARY EDUCATIONALLY DISADVANTAGED AND MINORITY VOCATIONAL/TECHNICAL STUDENTS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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Abstract

One of the most serious problems in vocational technical education across the U.S. today is increasing the completion rate as one step in the career development of the many people who aspire to vocational careers. These new students are permeating all levels of post-secondary education, but little has been done to look at the overall effect of instructional design, counseling, and administrative climate on the completion rates of these students. The purpose of this project was to investigate the impact of administrative climate, individualized instruction, and counseling for internality on the completion rates, control expectancy, and similar characteristics of high risk students. Both main and interaction effects were determined.

The individualized instruction intervention consisted of a modification of the systems approach to instruction. Counseling for internality involved the utilization of strategies known to increase internality in individuals which were synthesized into the basic framework of the Reality Therapy model. The goal setting intervention was a modification of the Delphi technique developed by George Baker for community college and vocational educators.

The overall design of the project included the utilization of linear models analysis comparing the differential effects of the three treatments within six Texas community colleges. The design employed was of the pre-post-test variety. Two schools received the full treatment of administrative intervention, counseling for internality, and individualized instruction; two schools received the administrative intervention only, i.e. partial treatment; and two schools served as no-treatment controls. The Adult Nowicki-Strickland Internal External Scale (ANSIE) served as the primary outflow or criteria measure. With data from this instrument, a detailed gain score analysis was completed, and effects were determined across treatment schools, programs (voc/tech or academic), and classifications -- developmental or non-developmental.

F I N A L R E P O R T

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INTRODUCTION

Problem Area and Its National Significance

Failure to complete a vocational program when once enrolled in it continues to loom as one of America's critical educational problems (Mink and Kaplan, 1970; Roueche, 1972; Mink and Roueche, 1974). Further, a condition exists where vocational instructors and administrators appear to be unable to obtain necessary remediation and counseling support for their students (Mink and Watts, 1978). Many vocational educators have little or no training in counseling or instructional design (Tesar, 1974). In addition, there exists a general lack of any organized system of viewing completion rates by tracing a single student. For example, in Texas the Texas Education Agency numbers 20,922 completions of post-secondary vocational-technical students for the year 1973. They show 71,302 enrolled in post-secondary vocational education as of October 1, 1974. Assuming that only one-half of all post-secondary students are enrolled in programs of twelve months or less duration, the completion rate in Texas for post-secondary vocational education is approximately four students for every seven enrolled.

Roueche and Kirk (1973) and Mink and Watts (1978) have demonstrated and documented that completion rates can be raised to a level of 95 out of 100 students enrolled. In order to do so, it becomes necessary to implement individualized instruction and counseling strategy called Counseling for Internality. In addition, the nature of institutional "climate" or humanistic factors and institutional goals and values may increase the percent of completions. The purpose of this study is to develop a regression equation that will give vocational educators a comparative view of which factors--organization climate, administration, instruction, counseling, or student characteristics--contribute

most to low completion rates. In addition, the study yields a description of specific strategies which, when applied, will alleviate problem areas.

In order to examine post-secondary vocational education in Texas, it was decided to focus the study in community colleges where the majority of Texas Education Agency public vocational programs are housed. In the following paragraphs, all references to community colleges or developmental studies assume that the target population consists of the vocational students.

The open admissions policy of community colleges is not yet a reality. The concept of the open-door, which proponents see as a central force for democratizing American higher education, has drawn strong criticism on many fronts. Critics have charged that the community college is diluting the unique contributions that it might make by promising to be all things to all people.

Those sympathetic with the ideal of open admissions are especially concerned about the results of efforts generally made by community colleges in accommodating the "non-traditional" or "high risk" student. In this investigation, the term non-traditional community college student will be used synonomously with "high-risk" student. The term refers to students who typically would not consider college attendance were it not for open admission policies. Such students tend to score below the twenty-fifth percentile on ACT composite predictor scores, have a history of negative experience in school, and have been characterized by low levels of academic motivation and effort. The non-traditional student may come from lower socio-economic level background and a disproportionately higher number of ethnic minority students are represented. It is this student who is intended to be the prime new recipient of educational opportunity at the post-secondary level. As one indication, Andrew Goodrich, Minority Research Director of the American Association of Junior Colleges, reports that the nationwide

return rate of minority students to community colleges after one year is only one in nine. Moore (1970) has challenged community colleges to match their pretensions with their performance. He emphasized:

> "The term open door is hypocritical rhetoric if the student, regardless of his level of achievement, . . . (does not) receive the best education possible in the college commensurate with his needs, efforts, and abilities." (Moore, 1970, p. 5)

It may be added also that the concept is valid only if students are able to succeed in their educational endeavors.

In an effort to prevent the open-door from becoming a revolving door of "easy in, easy out" for non-traditional students, concerned community college educators in many institutions have developed innovative developmental programs to provide the requisite remedial education needed so that high-risk students can ably pursue vocational and college parallel programs. In this study the term "developmental programs" refers to a program of remedial education offered community college students in an effort to increase both basic learning skills in tool subject areas as well as personal development interventions to assist the student to cope in a more satisfying and rewarding manner with his environment. As used by Roueche, developmental program refers to a program of intervention including two major components: individualized instruction toward academic goals desired by the student, and a composite counseling program to assist the student in his personal growth and his career planning. This developmental program is described in detail by Roueche and Kirk (1973). For purposes of this study, the investigators are concerned with non-traditional students planning to complete vocational-technical programs of study.

The above concerns, however, seem to be on a collision course with another set of realities in higher education. While new demands are being placed on two-year institutions to assume new functions and create new programs (e.g.,

new vocational-technical programs) for "new" (non-traditional) students, limited financial and other resources resist the expansion. Peterson (1971) states:

> "Financial resources have reached limits of availability. Educational costs have risen to new heights, and various external agencies press the institutions to evaluate their effectiveness and render account for expenditure of public and private funds." (Peterson, 1971, p. 12).

Peterson further contends that American higher education can no longer be what Jacques Barzun has characterized as the "firehouse on the corner" responding to all calls for assistance. Specific strategies for specific problems are needed.

Organizational Effectiveness

Many community colleges, like other types of higher education institutions, have not given adequate consideration to their institutional goals. As a consequence, they have incorporated programs into their respective curricula which are less than consistent with implicit goals and structures within the institution. For example, there may be community colleges with strong academic parallel emphases which are simultaneously attempting to institute vocational-technical programs for non-traditional students. There are community colleges which historically have been primarily vocational-technical in emphasis which are seeking to strengthen programs of preparations for students seeking to transfer to senior college institutions.

The question arises, what is the relationship between a community college's goals and the success of students in programs to which it gives higher priority as opposed to those to which it gives lower priority?

In the past, consideration of collegiate success within specified programs has been almost exclusively limited to personality and background variables of the students being investigated. Variables such as intellectual indices,

need achievement, and anxiety, as well as demographic characteristics such as sex, ethnicity, and socio-economic level have been the types of traditional predictor variables utilized. In contrast, comparatively little attention has been given to the consideration of institutional (contextual) variables descriptive of the collegiate environment in which the student is. Such consideration would enable one to examine the "goodness of fit" between student and institution and seek an optimal match. This strategy is increasingly being suggested by accountability conscious colleges and universities (Peterson and Vale, 1973).

While predicting behavior from personality by environment interactions is not a recent concept, in the area of collegiate environments, efforts in this direction had to await the development of appropriate collegiate environmental measures. Pace (1958) pioneered such efforts with the development of College Characteristics Index (CCI) for use as a companion instrument to the Activities Index (AI), a personality measure. Pace and Stern utilized Murray's need-press theoretical structure as the rationale. In this schema, effort was made to identify students' needs through the use of the AI and to relate these needs to corresponding collegiate "press" variables.

While their efforts were less than satisfactory, Pace was encouraged to revise the CCI and develop the College and University Environment Scale (CUES). This instrument provided major impetus for studies of collegiate environment, and a large number of such studies were generated between 1958 and 1971 including many which examined environmental variables other than those derived from the CUES. By far the largest proportion of studies cited are either descriptive of a particular setting, or intended as a comparison of multiple settings. Further most of the studies have focused on four-year institutions,

rather than upon community or junior college settings. In large part, this may be due to the greater appropriateness of collegiate environment measures for university settings and the greater accessibility of interested investigators.

The Institutional Goals Inventory (IGI), the instrument selected to appraise collegiate institutional goals, is also of recent vintage, and was developed in response to the recent press toward accountability (Peterson, 1970). Regrettably, the few empirical studies on institutional goals as summarized by Baker (1974) are merely descriptive in nature.

The development by ETS of the Student Reaction to College (SRC), a community college environment measure, has just been in the past year. It may be concluded that use of collegiate environment measures, especially at the college level, are just in their infancy. Hopefully, this study may be a pioneering effort in the utilization of such measures for predictive purposes.

Principal and Subordinate Objectives of the Study

Two major objectives of this investigation were planned:

1. To determine whether institutional variables descriptive of institutional goals and collegiate environment at selected community colleges increase the ability for program administrators to predict success of vocational-technical students over that possible from an analysis of personality and background data alone. Subordinate objectives related to this are as follows:

    a. To determine whether "objective" or "subjective" environmental indices contribute most to the prediction of vocational student completion rates.

    b. To determine whether student expectations regarding institutional goals and environment are meaningfully related to initial semester performance of target students.

    c. To determine whether perceptions of institutional goals and

environment are materially different among target students involved in vocational studies as compared to control students who are not.

d. To determine whether potential reasons for low completion rates among vocational students can be inferred from a comparison of the responses to the institutional environment and institutional goal measures of drop-outs and students remaining in the program.

e. To determine whether there are meaningful continuities between the two types of environmental measures used.

2. To determine whether the use of an institutional, participative, goal-setting intervention within the selected colleges is associated with improved student performance within vocational programs, over that attained by target institutions without that intervention. Subordinate objectives related to this are as follows:

a. To determine, within institutions utilizing the goal-setting intervention, whether there is movement toward consensus among administrators, supervisors, and other participants with respect to the institution's goals.

b. To determine, within institutions utilizing the goal-setting intervention, whether there is movement toward increasing the priority assigned to serving the needs of non-traditional students at that institution.

c. To determine whether institutional goals as perceived by members of the staffs of developmental programs differ materially from those perceived by institution administrators and supervisors.

Supporting Documentation and Data from Planning Studies

Since 1969 one of the co-investigators of this study has been engaged in developing and testing the effectiveness of developmental programs for non-traditional students in community colleges, including some of those in the present study. The highly favorable outcomes achieved are extensively described by Roueche and Kirk (1973) and Kirk (1972).

Major findings of the Roueche and Kirk (1973, pp. 58-59) study of five

selected community colleges (including three of the institutions in the study) can be cited:

Major findings may be summarized as follows:

1. Students in remedial programs earned significantly higher grades than did high-risk students in non-remedial programs.

2. High-risk students of like race-ethnic groups earned higher grades in remedial programs than did those in non-remedial programs.

3. In each college, grades earned by successive year-groups of students enrolled solely or predominantly in courses in developmental studies improved each year.

4. Academic performance of students in remedial programs dropped significantly after they entered regular college programs. Even with the significant decline in student retention acting as a selective or weeding-out factor, the grades earned by remedial students in regular college courses were with two exceptions in the D range.

5. Students in remedial programs persisted in college to a greater extent than did high-risk students in non-remedial programs.

6. At each college, students in remedial programs expressed greater satisfaction with instructor/instructional component of the remedial program than they did with the counselor/counseling component.

7. Based on findings for the 1969-70 and 1970-71 academic years, 50 to 54 percent of high-risk students in remedial programs completed a third semester of college. Thirty-five percent of the 1969-70 group completed two years of study.

Mink and Roueche conducted a National Institute of Mental Health funded study (Roueche & Mink, 1976) assessing the impact of counseling for internality and individualized instruction on high-risk youth in ten community colleges. The possible implications of their research present some fascinating propositions to community college educators. The major consideration and curiosity was whether or not well-executed, well-designed, systematic personalized instruction would in fact enhance the sense of the student being in charge of his/her life as well as reduce the anxiety he/she might experience in the college learning situation. In examining the data it became evident fairly early that instruction is a necessary

but not sufficient condition for the kinds of changes that were being looked for. Only in those cells where highly individualized instruction as well as composite counseling strategies were used were definitive and useful results obtained. It is always very difficult to determine just what significance is, and certainly the concept of significance in the traditional (statistical) sense does not apply in this field setting with its multitude of variables--many of which were not controlled and/or measured to assess their effects. We can assume that in addition to the highly individualized instruction and counseling that was occurring in the treatment cells where reduction in externality and trait anxiety occurred, the school "climate" in these schools, in a broad sense, was also more supportive of student learning and student success. It appeared that these more progressive and innovative colleges were attempting to be more involved with the student as a whole person and were, in fact, doing everything in their power to facilitate student success in and control over his/her own learning processes.

The NIMH study demonstrated at least in part that the community college can avoid the accusation of creating a negative cooling-out effect for the high-risk student. In fact, the data suggest it is possible to provide the kind of instruction, counseling and general climatic support to help people with histories of failure to succeed in modern community colleges. Continued refinement of these methodologies and closer examination of possible climatic factors involved is the goal of this current USOE project. This additional research effort is aimed at more clearly defining the role of institutional climate. Hopefully we can now begin to better identify the differences between a good educational program in the sense of promoting student growth and learning, and a poorer educational program in the sense of mitigating against or not facilitating the learning and success of the high-risk students. Stated in rather negative terms, this suggests that in

education, as in counseling and psychotherapy, the deterioration effect exists.

Results or Benefits Expected

In our initial proposal it was expected that the following benefits would accrue from the study:

1. It would be possible to determine whether significant improvement in student completion rate can be achieved through the additional interventions proposed here. Of particular interest and concern would be the proportion of vocational program students completing vocational-technical curricula. Unlike previous studies, interventions in the proposed study are directed toward significant others outside as well as within the vocational programs. Assuming a greater consensus about institutional goals favoring vocational education is achieved, the subsequent progress of vocational students on the job and in other academic programs may be expected to improve.

2. If the results achieved are as expected, an improved model for achieving acceptance of and support for vocational education would be available for dissemination and utilization by other institutions. Results obtained would, of course, be published.

3. In the event results obtained were not as predicted, each of the participating institutions would, nonetheless, have compiled highly important data for use in policy formation and decision-making and for institutional self-study.

4. Valuable experience would have been gained with respect to the utility of the relatively new instrumentation and goal-setting intervention procedures selected and related intervention models refined.

5. Participating institutions would have useful descriptive data which could be made available to future applicants, to assist them in intelligent educational self-selection.

6. Counselors could assist students in predicting vocational student success in particular colleges.

To restate, previous research by Roueche and Mink (Roueche & Mink, 1976) has established that individualized instruction when combined with a counseling intervention called "Counseling for Internality" can positively affect both the retention and the mental health status of developmental students within community/junior colleges. This study is intended to extend those findings in two significant

ways: 1) to determine whether or not selected institutional (environmental) variables deemed facilitative and others deemed inhibitory in their effects influenced the results obtained when instructional and counseling interventions were tried, and 2) to determine whether or not an administrative intervention aimed at clarifying and then increasing consensus about institutional goals contributed to the likelihood of favorable outcomes on the retention and mental health criteria. Effects were tested with the administrative intervention as the sole manipulation and then with that intervention done in concert with the two others.

Research Design

The research design for this investigation is such that two treatment conditions were applied in each of two educational environments. The educational environments and the treatment conditions were as follows:

1. Educational Environments:

   a) Vocational-Technical: This educational environment was characterized as having its primary educational objective within the vocational-technical area, based upon the preponderance of programs focusing on vocational-technical education (Colleges 1,2,3).

   b) Academic: This educational environment was characterized as having as its primary educational objective within the academic and/or liberal arts area. An expectation that graduates will move on to four-year institutions typically was in evidence. Institutions with such a classification had relatively few vocational programs (Colleges 4,5,6).

2. Treatment Conditions:

   a) Administrative Intervention: In this condition, the only intervention took place with administrators and was concerned with goal setting behavior. The method of intervention was Baker's GOALS procedure of participative goal setting.

   b) Student and Administrative Interventions: In this condition interventions were made with both groups -- administrators received the Baker's GOALS procedure utilizing the Delphi method, and students received the counseling and instructional interventions.

   c) Control: In this condition there was no intervention.

All subjects in all institutions responded to instrumentation at both pre- and post-testing periods. The hypotheses tested in this study were aimed at determining whether the extent of impact on student subjects was positively associated with the extent of intervention.

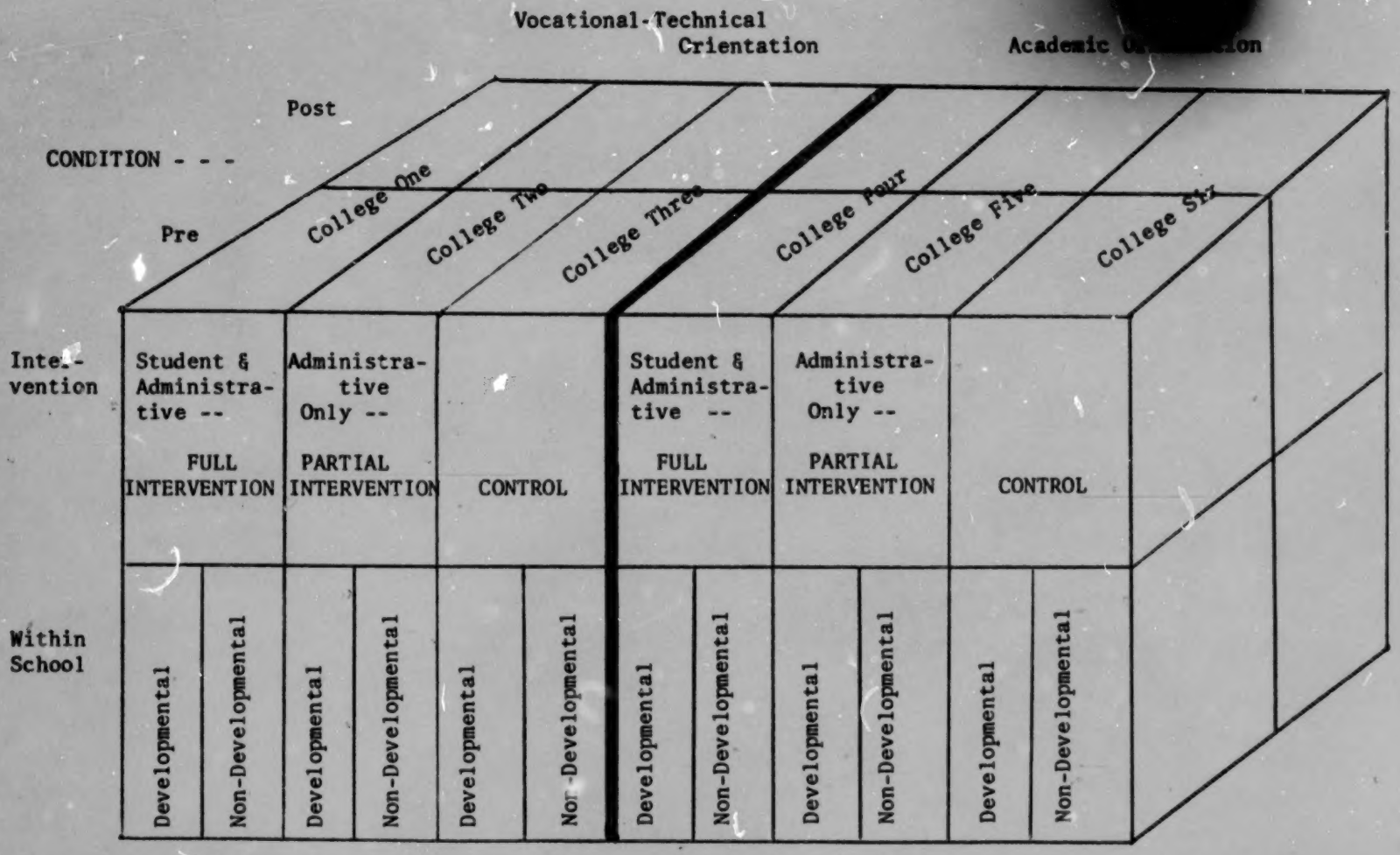
Independent Variables

Five major independent variables were examined:

1. College Orientation: As is suggested by Figure 1, three of the six schools were selected because the emphasis within these colleges

Figure 1

Basic Experimental Design for the Voc/Tech Project



was co-equal (or nearly so) with the emphasis on academic curricula. The three other schools were selected as institutions having a preponderant emphasis upon academic curricula.

2. Voc/Tech vs Academic Major: Subjects majoring in a voc/tech field of study were compared with students majoring in an academic discipline.

3. Status as Developmental vs Non-Developmental Student: The third independent variable was the status of student subjects as participants or non-participants within the Developmental Studies Program at their respective colleges.

4. Objective Institutional Characteristics: In an effort to operationally specify the nature of the collegiate environment at each of the six participating institutions, data were gathered from each of the six with respect to a number of objective institutional characteristics as specified by Astin (1962). These objective characteristics were adapted from Astin's listing of objective collegiate attributes found to differentiate types of post-secondary institutions. These attributes permitted a more precise definition of the institutional setting.

5. Degree of Previous Failure: On the Followup Questionnaire students were asked five questions to determine the degree of previous academic failure experienced.

The intent of these independent variables was to permit examination of the academic and mental health outcomes for subjects within and between each of the possible combinations of student sub-groupings. Hypotheses tested the premise that students majoring in fields at schools with a "compatible" orientation (e.g., a voc/tech major at a college with an emphasis defined as vocational-technical) achieve the most positive outcomes, and students whose majors are least compatible with the orientation of their setting demonstrate the least favorable outcomes.

Dependent Variables

A large number of dependent variables were utilized in this study in testing the numerous hypotheses posed. Of course, only a few dependent variables were used in testing any particular hypothesis. Dependent variables will be listed within the broad categories to which they apply.

Academic Outcome Indices: There were several ways in which the academic outcome of subjects was assessed.

1. Retention through the end of the second semester.
2. Grade Point Average (GPA) at the end of the first semester (Fall 1975).
3. Cumulative GPA (after end of Spring semester 1976).

Locus of Control Score at the Pre-Test Point: During the pre-test period (November 1975) the locus of control score for each subject was determined by administering the Adult Form of the Nowicki-Strickland Internal External Locus of Control Scale (ANSIE).

Extent of Gain or Loss in Locus of Control Score from pre- to post-test: The extent of change in ANSIE score served as the principal means by which locus of control was assessed. In this study ANSIE score changes were attributed to the experimental interventions.

Instrumentation

It was indicated in the previous section that data would be gathered from two sources: standardized instruments and institutional records. The instruments used in this investigation and a brief description of each is presented below.

1. Student Reaction to College (SRC), Educational Testing Service, 1973.

   The SRC is a new measure of perceived college environment designed especially for students in community and junior colleges. The questionnaire inquires into students' attitudes toward their academic programs, their study experiences, college living conditions, experiences with other students, and the administrative procedures and regulations of their colleges. The instrument contains 150 items and yields 15 factored item sub-groups.

2. Institutional Goals Inventory (IGI), Educational Testing Service, 1972.

   As summarized by Britell, et al. (1973, p. 2), the IGI:

   > . . . is designed to measure most important kinds of goals held by the broad spectrum of American colleges and universities, including public universities, independent colleges, church-related institutions, and community colleges. The theoretical framework of the instrument consists of 20 goal areas, divided into two categories: outcome goals--the substantive objectives of institutions, such as intellectual development, vocational preparation or public service programs; and their process goals--internal objectives that relate for the most part to educational process and campus climate. The inventory itself consists of 90 goal statements, 4 relating to each of the 20 goal areas plus 10 miscellaneous goals statements...Using a five point scale of importance (with 5 the highest) respondents give two judgments for each goal statement: how important is the goal presently at the campus, and how important should the goal be.

3. Work Values Inventory (WVI), Super, 1970.

   This instrument provides a measure of 15 values having to do with work. The 15 value scales are related to extrinsic and intrinsic values. Knowing the values motivating an individual and having information concerning those values which are most readily realizable in various occupations should better prepare the individual in planning for the future.

4. The Adult Form of the Nowicki-Strickland Internal-External Locus of Control Scale (ANS-IE), Nowicki and Duke, 1974. See Appendix A.

5. Ohio Vocational Interest Survey (OVIS), D'Costa, Winefordner, Odgers, and Koons, 1970.

   The OVIS comines a Student Information Questionnaire with an Interest Inventory which provides useful information for vocational and educational planning. It incorporates the concepts of data, people, and things which are basic to the 1965 edition of the Dictionary of Occupational Titles (DOT). The DOT defines data, people and things as essential elements of any job and uses these three elements to classify and describe more than 21,000 jobs. This instrument, given its relationship to the DOT provides a valuable common tool to be used by students, parents, teachers, and all others concerned with the career decision making process.

6. Biographical Information Forms (BIF) and Follow-Up Questionnaires (FUQ).

   The project wrote its own BIF for students and another for faculty and administrators. See Appendix B for questionnaires and distat results.

As noted above, a second set of data was gathered from institutional records. Astin (1962) contends that institutional characteristics can be thought of as "independent variables" which can be used to account for differences in student development. Astin was primarily concerned with the identification of "objective" institutional characteristics which might best be used to differentiate among collegiate institutions. He conducted a study with a sample of some 335 institutions of higher education. A factor analysis of 33 initial variables resulted in a reduction of these variables into the following six major factors: Affluence (wealth,) Size, Private (vs Public) Control, Masculinity, Homogeneity, and Realistic Orientation.

The investigators attempted to adapt the factors obtained by Astin (1962) and utilize them in their efforts to objectively assess and compare the institutional environments of the six community colleges comprising the sample. Toward this end an instrument, the Objective Characteristics of Community Colleges Questionnaire was developed. See Appendix C.

Procedures of Data Collection

All beginning students in vocational programs in each of four schools (two with vocational/technical emphasis and two with academic emphasis) and a comparison group of students from other programs within these schools comprised the student sample employed in the investigation of treatement effects. A control student sample was identified from each of two control schools respresentative of a vocational/technical or academic orientation. Such a sampling procedure made possible both between-school and within-school comparisons.

A second group of subjects was comprised of all administrative and supervisory personnel within the six schools. A description of sample size (student and administrative) by condition and institution is presented in Figure 2.

To summarize, data for this investigation was gathered from two sources: standardized personality and institutional measures and school records. Initial data gathering from the sample specified in Figure 2 was conducted during September-November, 1975. This initial data gathering was essential in order to allow for preliminary data analyses, provide baseline data to be used in evaluating the effects of both the vocational program and goal setting interventions and to provide participating institutions with preliminary data about their students. The post-testing took place during Spring, 1976.

FIGURE 2

Composition of the Sample, Pre-Test

Institution	Subject Sample	
	Developmental Students	Comparison Students
Vocational		
Experimental:		
College 1	n = 41	n = 37
College 2	n = 129	n = 51
Control:		
College 3	n = 51	n = 26
Academic		
Experimental:		
College 4	n = 74	n = 44
College 5	n = 33	n = 44
Control:		
College 6	n = 60	n = 29
TOTALS	n = 388	n = 231

Total n = 619

INTERVENTIONS

Individualized Instruction Intervention

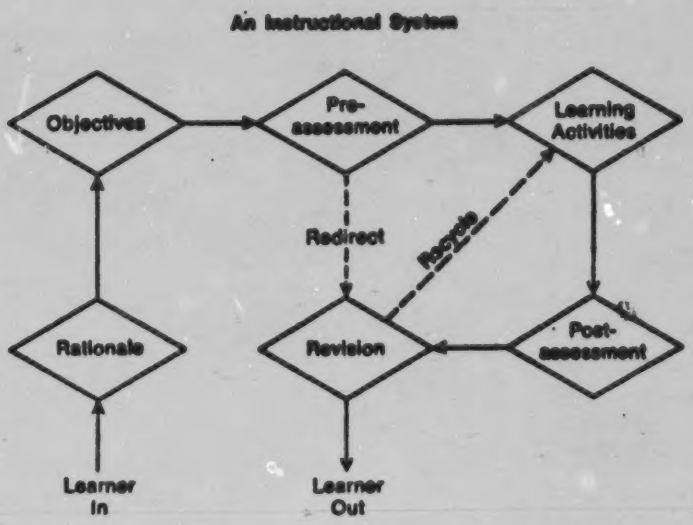
Background

The instructional systems set in place or observed in operation among participating schools are based on the writings of Ralph Tyler, (1950). James Popham, (1970), Bela Banathy, (1973), and Jerrold Kemp (1971).

The particular systems model exported and endorsed by this project and against which the criteria for evaluation of instruction in project schools was determined is a synthesis of the work of the above writers and succinctly articulated in operational terms by Herrscher (1973) and Washburn (1975).

The basic elements of this model (Herrscher, 1973) are as follows: 1) rationale, 2) specific instructional objectives, 3) pre-assessment, 4) learning activities, 5) post-assessment and 6) revision.

Figure 3



Herrscher (1973) and Washburn (1975) state that a systems approach enables the instructor to monitor and measure the degree of mastery (Bloom, 1973) over a given content and/or skill area.

An Examination of Each Facet of the Systems Approach

1. Rationale - According to Herrscher (1973) and Washburn (1975) students have increased motivation to learn when they are told in clear non-esoteric language why it is important that they master the course content. Without a clear student-centered rationale, learning activities become barriers to climb over rather than being tied to the student's personal and/or vocational needs.

An instructor writing a course or unit rationale needs to relate his reasons for requiring the learning of specific content to the student's purpose and objectives. This approach suggests that instructors would benefit by listening carefully to reasons students give for taking the course and, where possible, tie the rationale to as many student needs as possible. In addition, an effective rationale might relate course content to actual on-the-job behavior. Specific reasons might also be given concerning how certain elements of the course will prepare the student for success at the next course level.

2. Objectives - Herrscher (1973) and Washburn (1975) describe objectives as the foundation or cornerstone of any instructional system. Clearly stated objectives are vital not only as a territorial map for instructors and students but as the basis for any successful evaluation program.

The objectives for a unit of instruction are written in terms of student behavior. Objectives state what the student will be able to do as a result of the instruction.

Washburn (1975) encourages not only instructor-designed objectives, but those developed out of conversations between the student and the teacher.

Mink and Roueche (1975) offer a systematic approach for teachers to use in the negotiation of learning objectives with students. Mink's "Counseling for Internality" is a behavior change strategy quite compatible with the systems approach. Mink's model builds on and incorporates most of the elements of Glasser's (1969, 1972) Reality Therapy principles, a system with proven application in the educational setting.

3. Pre-assessment - Herrscher (1973) and Washburn (1975) both agree pre-assessment is necessary to determine the readiness of the student to pursue the course objectives. According to these authors, this step is needed to determine (a) if the student has the necessary prerequisite knowledge and skills to benefit from the instruction; (b) which, if any, of the stated objectives he can already perform; and (c) where he should be placed on the learning activities continuum when there is an indication he already can perform some of the expected behaviors. Pre-assessment offers the opportunity for remediation should the student not possess entry level skills as well as the redirection into areas more compatible with his current skill profile.

4. Learning Activities - Learning activities are the vehicles used by the student to move through the course or unit of instruction and to satisfy the behavioral requirement(s) of the objective(s). The learning activities are means to the objective(s), not ends in themselves.

Learning activities should be carefully selected in light of the instructors understanding of the student(s) he is teaching. Non-traditional students often benefit from non-traditional means of learning. Research appears to point in the direction of dialogical methods and multisensory modes of instruction.

Regardless of the approach used, Herrscher (1973) suggests the following factors be given serious consideration.

Explicit directions - Student should be given explicit directions regarding all procedures and policies. Operationalizing the systems approach is a new experience for most students and many instructors. Assumptions, often left unquestioned under traditional modes of instruction, should be carefully scrutinized. When in doubt, be explicit. Where possible, try out the system on a small group of learners and revise the directions accordingly.

Learning modules of appropriate length. The length of a module or unit of instruction would vary with the age, maturity, ability and motivation of the students in the target group. Units for developmental courses should be designed for completion in 1 - 3 instructional periods.

Frequent practice. Prior to taking the criterion test for the performance level desired (A, B, C, etc.) the student should be given ample opportunity to practice equivalent behavior in a suitable setting. If criterion is not reached the student typically engages in another period of instruction and/or practice followed by a subsequent attempt at criterion. This cycle may be continued until the student masters the content at the mutually agreed upon level.

Knowledge of results. Non-judgmental feedback to the learner about his performance keeps the student involved and motivated. Feedback of the kind that focuses specifically on what the student is doing well and builds on the base of previous accomplishments will, in most cases, produce a level of performance satisfactory to the teacher and the student alike. A rule of thumb is not to allow a period of instruction to end without providing explicit feedback to the student regarding progress on the task at hand. Feedback need not come only from the instructor but can be designed into the learning activities themselves.

Media. Media, according to Washburn (1975) needs to be carefully tied to objectives and is best determined after the objectives are in place. Herrscher

(1973) indicates media can be broadly defined as persons, materials, and activities. Thus media can be said to be all planned input into the classroom to produce the desired learning.

5. Post-assessment - Herrscher (1973) as well as Washburn (1975) strongly support the notion of a criterion-referenced approach to evaluation. In criterion-referenced testing, a standard of acceptable student performance is established prior to the test. Each student's performance is compared against the standard, not against other students in the class. Typically students negotiate a standard (i.e., A, B, or C) suitable to their objectives and attempt to achieve criterion for that standard.

The difference between norm-and criterion-referenced testing is shown in the following chart by Herrscher (1973).

Norm-Referenced Approach	Criterion-Referenced Approach
Testing is used to ascertain a student's level of performance in relation to the performance of others.	Testing is used to ascertain a student's performance with respect to an established criterion or performance standard.
The normal curve is a guide in assigning grades. It serves to sort students.	Mastery of objectives is the basis for grading, with instruction adapted to individual learning rates.
Aptitude is viewed as the capacity for learning.	Aptitude is viewed as the time required to master objectives.
Testing is used to assess individual students.	Testing is used to assess teaching.

Research (e.g., Bloom, 1973) has indicated that we all learn different subjects at different rates. If instruction is to respond appropriately to this fact, then the system delivering the instruction must be sufficiently flexible to accommodate students learning at different rates and in different ways. The same is

true of the evaluation system. Thus a testing system based on criterion-referenced approaches is essential.

6. Revision - Course revision (Herrscher, 1973) (Washburn, 1975) is based on feedback from the students. Revision data is gathered for the specific purpose of improving the instructional system so more students can achieve the objectives. Revision data is more valid and useful when gathered systematically.

Washburn (1975) believes that the revision process is the most essential element of the systems approach to instruction. Four of Washburn's means of gathering revision data are outlined here:

Error rate: This involves the collection of responses to each test item and an analysis of those items in which the desired response is not obtained with the expected degree of consistency.

Interview technique: This typically involves a small group of students working with the teacher or evaluator to determine specific ways in which the instruction can be improved. This technique is often more successful immediately following a specified unit of instruction rather than at the end of the course.

Diagnostic-criterion test: Here an instructor attempts to measure the criterion behavior itself. For example, do the behaviors called for fairly represent the achievement of the objectives? In addition, the instructor or evaluator looks at the degree to which the students reached criterion on each of the objectives. For example, how many students reached what criterion level at the A,B,C,D performance level?

Block out: This approach permits the streamlining of the system by "blocking out" all material in a given learning sequence not demonstrated as essential in meeting objectives. Blocking out permits an instructor to eliminate much of the "busy work."

These and other systematic approaches should prove helpful in the revision of any instructional system.

The six elements or steps of a systems approach to instruction (rationale, objectives, pre-assessment, learning activities, post-assessment, and revision) form the framework utilized by the NIMH project staff in training instructors and in evaluating the instruction systems of appropriate project schools.

Methods

In August of 1970 and 1971, the Coordinating Board, Texas College and University system, provided training in individualized instruction methods and procedures in workshops at two schools participating in the Voc-Tech Project. During the Spring of 1976 visits were made to all six project schools in order to assess the amount of individualized instruction practiced in each school.

All six project schools have a program of developmental studies which serves as the primary unit of analysis for the individualized instruction component of the project. The faculty who were trained in individualized instruction methods were teaching in developmental studies program Approximately 75% to 100% of the faculty teaching in developmental studies programs in each of the six schools were interviewed and an estimated 50% were observed in teaching activities.

The instrument used to assess the degree to which individualized instruction was being utilized was the Individualized Instruction Checklist, developed by Barbara Washburn and Bart Herrscher. The instrument is made up of sixty-one statements which are checked yes or no. A criterion score of 40 is considered to reflect minimal use of individualized instruction. See Appendix D for instrument.

Each developmental studies faculty person was asked to complete the Individualized Instruction Checklist. The Checklist was also completed by the observing staff person for schools two and five and the results were compared.

To serve as a comparison and to provide a description of the individualized instruction practices in each school, a 20% sample of the general faculty was also asked to complete the Individualized Instruction Checklist. Half of the sample (10%) was chosen from Voc/Tech faculty and the other half (10%) from the academic faculty.

Baker Goal Setting Intervention

The goal setting intervention was a modification of the Delphi technique developed by George Baker for community college and vocational educators. This simulation involves representatives from constituent groups (in this case community leaders, college administrators, faculty, students) sitting down and doing an individual sort on a series of goal statements looking at overall goals for the institution. Both process goals and outcome goals are involved. After the individual ranking of process and outcome goals there is a group sort involving four individuals representing different constituent groups. The group must reach a consensus on goal ranking of each item. The individual sort is then repeated in order to measure the amount of change which has occurred in individual opinion after the group dialogue experience.

The originator of the Baker Goal Setting Procedure, Dr. George Baker, III, held workshops at three of the four community colleges designated for the administration intervention. College of the Mainland, Alvin Junior College and Odessa College were visited by Dr. Baker and either Dr. Mink or Dr. Appel in November 1975. Laredo Junior College had its administration intervention in December at a session coordinated by Dr. Appel.

Counseling For Internality Intervention

Background

Julian Rotter's social learning model has four components. These are: the ability to act, the presence of contingency or payoff, the valuing of the payoff on the part of the learner, and the psychological context in which learning occurs. These four dimensions or components of Rotter's social learning model are tied directly to the Reality Therapy processes advocated by Dr. William Glasser and to

a number of specific counseling techniques which have been shown to increase internality in externally-oriented individuals.

The Reality Therapy model starts with stressing that the most essential step is building an involvement or making a friendship with the individual. This first step of relationship development has parallels in Julian Rotter's concept of the psychological context of learning. In building a relationship or making friends particular stress is put upon the element of trust or mutual confidence in the relationship. This is key to Rotter's social learning model which also calls for confidence in the learning situation.

The second step in Glasser's process of Reality Therapy is to identify the behavior. The behavior that Glasser speaks of and the act which Rotter speaks of in social events or situations are isometric. Once behavior is identified the client is asked to associate what is happening with what the payoff or results will be if he continues pursuing that particular course of behavior. The payoff is associated with Rotter's expectancy variable. In fact in many counseling situations getting students to see the relationship between their behavior and the natural consequence of a particular behavior is a very crucial step. In the area of working with delinquents this is sometimes the most significant single step necessary in order to help a delinquent begin to change or modify his behavior.

Thirdly, in the Glasser model, the question is raised "Is this doing you any good?" or "Are you getting anything out of it?" Essentially the person is asked to make a value judgment and confirm for himself the worth or non-worth of a particular payoff. In the case of therapy where behavior needs changing to be more productive for the individual, hopefully the value judgment will be "No, this is not what I want." Such a statement will enable the client and the therapist to establish a new more productive behavior.

In the Glasser model, Rotter's social learning model is essentially duplicated through obtaining a contract and a commitment to the contract to pursue new behaviors which will get a payoff which the individual does want, does value, and which will enhance his life. In fact the unlearning and relearning of behavior is at the heart of the Reality Therapy process steps and ties almost one-to-one to the steps in Rotter's social learning model.

Reality Therapy and Rotter's social learning model are utilized in the process of counseling for internality. Further reading on the subject is available from the project staff. A workbook for training counselors has been developed titled "The Reality Therapy Process and Counseling for Internality: A Self Instructional Workbook." See Appendix E for availability.

Training

Oscar G. Mink, a certified psychologist, Reality Therapist and director of this project, personally conducted training in the strategies of composite counseling used in the counseling treatment cells. The workshop syllabus that was used is available, see appendix E, Selected Reprints and Publications.

Schools 2 and 4 worked with Dr. Mink in an intensive week-long workshop on Reality Therapy and composite counseling strategies. One of these two provided training for their counselors at a second workshop. All of these workshops were conducted in the Fall of 1974. An outline of the program for the workshop is in the syllabus.

All workshops were intensive. Sessions began at 9 a.m. and concluded at 4:30 p.m. and informal discussion continued through coffee breaks and meals. Instruction consisted of didactics, films, audio tapes, and role playing. Each participant was required to demonstrate competency in the use of the composite counseling strategies (including Reality Therapy). The articles "Counseling for

Internality" and "Reality Therapy in Learning Groups" have more complete descriptions of the counseling techniques used. See appendix E.

Measurement

It was considered important to measure the degree of implementation of the composite counseling strategy. Otherwise, we could not say with certainty that the counselors in different schools were in fact using different approaches. Therefore, each counselor in the two full treatment schools was evaluated for ability to implement the strategies of the approach in which they had been trained by project personnel. The evaluation was conducted at three levels:

1. Counselor self-appraisal.
2. Self-evaluation by the counselor of each counseling session. (Record of counseling contacts, contracts, and a process checklist.)
3. Student evaluation of the counseling experience.
4. Professional evaluation of reality therapy.

Self-Appraisal and Self-Evaluation

First, it was necessary to demonstrate that individual differences in counselor competency would not confound the results. Therefore, every counselor in every cell was requested to complete a self-appraisal form at the onset of the academic year. These results were compared by cell to assure a comparable level of skills across treatment groups. All counselors saw themselves as proficient in interpersonal skills as measured by the "Self-Appraisal" scales: This scale was based upon Carl Rogers' "Characteristics of the Helping Relationship" (Rogers, 1961).

In addition, two other self-evaluation forms were sent to counselors in the two experimental counseling cells. These forms were designed:

(a) to remind the counselors periodically of specific behaviors expected of them in using the new approach. (This was a process checklist which was a duplicate of the form used by the professional evaluators. All counselors saw themselves following the process correctly.)

(b) to tabulate the frequency with which the counselees implemented specific plans made during the counseling sessions.

Student Evaluation

At the conclusion of the academic year, students were asked to evaluate the short- and long-term effects of their counseling experience. Their appraisal forms were grouped by counselor as well as by school to check both counselor competency and possible school differences. All schools involved in the experimental counseling cells returned student evaluation forms with the exception of one full-treatment school which received an independent evaluation as follows: The principal strength of the counseling program is the degree of intensive involvement achieved by the counselors with the CBS students and the Advanced Education Program students. They spend a great deal of time together in various social and recreational settings, starting off in the fall with a barbeque and continuing with similar activities throughout the year. Another basic strength of the counseling program has to do with a number of contacts that they make with their students in the program, and the action orientation nature of the counseling contact. For example, I asked counselors what they did and here are some of the responses. At least one of the three contacts with students leads to some kind of commitments or contractual arrangement. Many of these take the form of immediate action steps. For example, the counselor will say to the student, "is there any reason why we can't go to the library now?" The student says, "No." They go to the library together and the counselor will get the student involved in whatever type of library work needs to be gotten. Students are monitored closely. If students are absent from a class, the counselors will call the student as soon as they are aware of the absence. They have been calling the students at home and this has brought some negative reaction from the students, but I encouraged the counselors to continue making the contacts as soon as they were aware that a student was missing a class. If a make-up test has to be made, the

counselors follow through to get the test scheduled as soon as possible after the test has been missed. They concentrate on getting the students to make commitment. When they make an appointment with the student they write the name of this student on the calendar so that the student can see that they're setting aside a period of time for them. The counselors verify by telephone or personal contact all absences. They discuss with students responsibility for program involvement: what it means to be a student in the program and what the norms of the program are right at the very beginning of the term. Students are involved with selected projects where they can help other people. They go to rest homes, juvenile centers, and other places where they provide direct to human service. Students are committed to surveys and other tasks which the students must carry out. Counselors also work with the students' tutors in helping them develop their skills in interpersonal relationships and learning how to apply basic counseling techniques when they're working with their tutees. This very concrete action oriented aspect of counseling adds a very powerful and strong dimension to the counseling program.

Two schools returned student self-evaluations. These schools were not in the full cells. Students in control or comparison schools were about as satisfied with the counseling which they received as those students in the experimental schools. Hence, suggesting that special locus of control counseling techniques are viewed as favorably by recipients as more standard techniques.

Professional Evaluation

Each counselor in the experimental counseling cells was required to tape record four counseling sessions. The four taping weeks were specified to insure uniformity of time samples. The best tape was selected for each counselor, based on the counselor's self-rating of that tape. The rationale for using the best tape was to see what level of competency the counselor was able to attain at his or her best. These

tapes were rated blind by a counselor at the Reality Therapy Institute in Los Angeles. It had been predetermined that students of any counselor who failed to receive a satisfactory rating would be considered as a separate group in the final data analysis.

It is recognized that there are numerous variables affecting counselor effectiveness which cannot be controlled for completely in a field study of this type. Therefore, it was necessary to assume that the counselor evaluation battery would be sufficient to ascertain possible counselor differences which might confound the results. The final conclusions are limited to the extent that these efforts fail to control for all possible counselor differences.

Data Analysis

The statistical data treatments in this study range from simple T-tests to analysis of covariance. Since a large number of repeated- measures comparisons had to be made, a linear models strategy (Ward and Jennings, 1973) was employed. The project staff created a series of tape-resident data and control card files at the computation center. An ordinary least-squares problem solver (Nie et al, 1975) was used to make the tests to hypotheses. The chief advantage of this procedure is that it allowed us to identify the assumptions of the models used to test the hypotheses and to come to a consensus about the models themselves as well as about the hypotheses. We were able to unambiguously evaluate the degree to which student learning occurred, and to specify the magnitude of the change that can be expected for each treatment.

This method also enabled us to present unambiguously treatment interaction effects. One of the most difficult obstacles to learning research is the well known fact that students who begin at higher levels often learn less because they simply have less to learn. Judgments about treatment must therefore be qualified by statements about initial levels of performance. We chose to take initial level into account by essentially replicating the hypothesis test for treatment for every initial performance level. Thus, we not only present the expected gains for each treatment for a person having an average fall score, but also the expected gains for the average person in each treatment, and the expected gain for both higher and lower performance levels.

The data analysis was conducted in two parts. In the first part some 600 students were used. Since many of the hypotheses relate only to descriptions of the community college population, students who failed to take the spring follow-up tests could be included in the sample for the sake of improving "representativeness"

of the sample.

In the second part, some 290 students were used. Since many of the hypotheses relate to change over time, students who failed to take the spring follow-up tests had to be excluded from the sample in this part of the analysis. Despite this attrition in the size of the sample, however, no significant selection bias seems have been introduced. Careful comparisons between the students who did and did not take the spring tests failed to reveal any significant differences on the dependent variables used in this study.

The problem of estimating gain scores proved to be sufficiently difficult that the models used require detailed explanation. According to the linear models strategy, hypotheses are tested by comparing full and restricted models. The full model is applied to the data and evaluated for goodness of fit and then the restricted model is similarly evaluated. The full model is so labeled because only it is capable of detecting the hypothesized differences in the sample. The restricted model is so labeled because of its incapacity to detect the hypothesized difference. If the two models fit the data equally well, we conclude that the hypothesized difference is small or non-existent. The models used to estimate gains are multiple regression models of the form:

$$Y = a_1X_1 + a_2X_2 + b_1P_1 + b_2P_2 + E^{(1)} \quad \text{(Full Model)}$$

$$Y = a_1X_1 + a_2X_2 + b_0P_0 + E^{(2)} \quad \text{(Stability Restriction)}$$

$$Y = a_0U_0 + b_0P_0 + E^{(3)} \quad \text{(Equality of Gain Restriction)}$$

$$Y = b_0P_0 + E^{(4)} \quad \text{(Significance of Gains Restriction)}$$

Where:

Y is a vector containing the criterion scores at time 2

X_1 is a vector containing A "1" if a criterion score is observed for a person in Group 1; "0" otherwise.

X_2 is a vector containing a "1" if a criterion score is observed for a person in Group 2; "0" otherwise.

P_1 is a vector containing the time 1 scores of individual in Group 1, "0" otherwise.

P_2 is a vector containing the time 1 scores of individual in Group 2; "0" otherwise.

P_0 is a vector containing the time 1 criterion scores.

U_0 is a vector containing only the number "1".

E^i are vectors of residual error.

a_1 and a_2 are coefficients associated with group membership.

b_1 and b_2 are coefficients associated with the stability of each group

gain scores were computed for each college and for each sub sample using the formula:

Expected gain = $[(a_1) + b_1 (P) - (P)]$. (A value representing the number of points we would expect a Group 1 person having a time 1 score of I to gain).

FINDINGS

Overview of Domains Explored

This study is about the performance of students who attended six Texas community colleges during the 1975-1976 academic year. Three main concerns were addressed: (1) How much of performance difference does the added intervention account for? (2) How important is the institutional environment in the areas of academic performance and career orientations? (3) How important is internality in the areas of academic performance and career orientations?

We have organized the results of this study into three groups of conclusions, one for each of the main concerns. The are presented in the following order: (1) Intervention effects (2) Institutional environment effects and (3) Locus of Control effects.

Intervention Effects: Variables of Prime Interest

a. Achievement

The indicator of academic performance used in this study was the recorded cumulative grade point average (CGPA). For nearly all of the students, this was measured only for their first year of community college experience. A majority of the students remained in our sample for the entire year so we were able to obtain both Fall and Spring CGPA's.

In our first comparison, we observe three groups: (1) students who attended the two colleges where both faculty and counselors participated in the intervention, (2) students who attended the two colleges where just the counselors participated in the intervention and (3) students who attended the two colleges where neither participated. Although the comparisons depart from rigorous conditions of experimental design, we use the terms

"full intervention", "partial intervention" and "control" to describe these groups of students. We observe that the Fall CGPA for the three groups differ little. The differences are statistically significant, however.

Table I

Fall CGPA Values for Three Treatments	
Intervention Condition	Fall CGPA
Full	2.49
Partial	2.94
Control	2.71

These differences are in a small way responsible for the fact the Spring CGPA expected values also significantly differ.

Table II

Spring CGPA Values for Three Treatments	
Intervention Condition	Fall CGPA
Full	2.45
Partial	2.66
Control	2.68

It is interesting to note that the cumulative grade point averages do not seem to improve during the first year, nor do the three groups seem to differ in their respective rates of change. This reflects in part the fact that the comparisons are made between cumulative grade point averages rather than between raw single-semester grade point averages.

b. Internality

The Locus of Control indicator used in this study was the Adult Nowicki-Strickland Internal-External (ANSIE) scale. Students were tested with the same instrument during the Fall and Spring semesters. Their results are presented in Table III.

Table III

Spring and Fall ANSIE Values for Three Treatments		
Intervention Condition	Fall ANSIE	Spring ANSIE
Full	11.27	11.18
Partial	9.48	8.98
Control	11.04	10.80

The Fall differences are statistically significant but the Spring differences are not. The ANSIE is scored so that the lowest values reflect the highest levels of internality. Thus, there appears to be a slight shift towards internality during the first year of college. This possibility will be investigated further using change models.

c. Retention

Each group of students was investigated with respect to the number of students that dropped out of college before the end of the first year. The percentage that dropped out for the Full, Partial and Control groups was 19%, 29% and 32% respectively. This difference is statistically significant. It indicates the existence of a powerful intervention effect. This point will be discussed in detail later.

The findings presented so far reveal somewhat of a mixed picture. Intervention seems to have made a large difference only in the area of retention. But there are severe problems with these comparisons. In the first place, raw gain scores cannot be compared unless it can be shown that they are not correlated with initial score differences. Secondly, these schools differ in their success in recruiting "high risk" or "developmental" students. We can control for the problem of initial score dependence by using models that allow us to replicate tests of hypothesis for every level of prescore performance described earlier. We can control for the possible confounding effects of student quality by replicating the analysis for developmental and non-developmental students separately. We now turn our attention on this part of the analysis.

Developmental vs. Non-Developmental Students

a. Achievement

We investigated the question of whether developmental students who attended colleges having full intervention conditions were able to gain more grade points than those who attended partial intervention colleges using different sets of linear models. We replicated the test for three levels of Fall CGPA; 0.0, 2.7, and 4.0. The gains we would expect for the the lowest, highest and average level of CGPA are presented in Table IV. Non-developmental students have been excluded from this comparison.

TABLE IV

SPRING AND FALL CUMULATIVE GRADE-POINT AVERAGE VALUES FOR DEVELOPMENTAL STUDENTS AT THREE LEVELS OF FALL GRADE-POINT PERFORMANCE

INTERVENTION CONDITION	EXPECTED CUMULATIVE GRADE POINTS GAINED*		
	Fall CGPA of 0.0	Fall CGPA of 2.7	Fall CGPA of 4.0
Full	+.31	-.18	-.25
Partial	+.16	-.05	-.08
Control	+.49	-.13	-.16

A negative sign indicates that CGPA declined. Thus, +.31 indicates an expected gain of one third of a cumulative grade point, and -.25 indicates an expected loss of one fourth of a grade point. A difference of one fifth of a point is statistically significant.

This comparison is interesting because it indicates that developmental students in the control condition colleges at the lowest grade point levels gain more than do the developmental students in colleges having full and partial intervention conditions. For the average students, the full intervention setting seems to result in a slight drop in CGPA.

b. Internality

We investigated the question of whether developmental students who attended colleges having full intervention conditions were able to become more internal than those who attended partial intervention and control condition colleges in the same way. We replicated the test of hypothesis for students with an initial score of 0, and initial score of 11, and an initial score of 20. We present the expected gains for each of these groups. The first is the most internal, the second just average and the third is the most external.

TABLE V

EXPECTED ANSIE GAINS FOR DEVELOPMENTAL STUDENTS IN THREE TREATMENT CONDITIONS AND WITH THREE LEVELS OF INITIAL PERFORMANCE

INTERVENTION CONDITION	EXPECTED CUMULATIVE POINT GAINS BY GROUP		
	Fall ANSIE of 0.0	Fall ANSIE of 11.0	Fall ANSIE of 20.0
Full	+3.13	+.57	+1.55
Partial	+2.47	+.13	-7.21
Control	+1.37	-1.33	-3.53

A negative gain indicates a shift towards internality. A difference of 2.2 points is statistically significant.

Taken at face value, this table indicates that new developmental students who attend control condition colleges can be expected to shift more in the direction of internality than new developmental students who attend full intervention condition colleges no matter what their initial score of ANSIE. Moreover, control condition colleges can be expected to do better than partial condition colleges for students who obtain an average ANSIE score. This finding is all the more interesting when we consider the same comparisons for the non-developmental population. We now turn to that part of the study.

Here we desire to know whether full intervention conditions facilitate the student's ability to learn internality. Observe Table VI.

TABLE VI

EXPECTED ANSIE GAINS* FOR NON-DEVELOPMENTAL STUDENTS IN THREE TREATMENT CONDITIONS AND WITH THREE LEVELS OF INITIAL PERFORMANCE

INTERVENTION CONDITION	EXPECTED CUMULATIVE GAINS IN ANSIE BY GROUP		
	Fall ANSIE of 0.0	Fall ANSIE of 11.0	Fall ANSIE of 20.0
Full	+4.61	- 1.59	-6.8
Partial	+1.00	- .79	-2.4
Control	+5.27	-.11	-4.5

* A negative gain indicates a shift towards internality.

This table indicates that the new non-developmental students who attend control condition colleges can be expected to experience smaller gains in the direction of internality than students who attend full intervention condition colleges. The full intervention condition situation seems to produce more internality than does the partial intervention condition. Thus, it seems that the intervention works, but only for nondevelopmental students.

c. Vocational/Technical vs. Academic Students

One of the most important distinctions community college students make between themselves is the terminal/transfer or "voc-tech"/"academic" distinction. We have already seen that intervention effects work best for non-developmental students. Our concern here is with the question of whether a similar situation exists for the voc-tech/academic distinction. We desire to know if the expected ANSIE gains are greater for the voc-tech students than for the academic major students. We desire to examine difference within each college while ignoring the full, partial and control distinction. We begin by examining the differences for only the developmental students. The results are graphed to make the presentation of findings more interpretable.

Table III-3-1 indicates that developmental voc-tech students having fall ANSIE scores of 11 can be expected to shift just one fourth of a point in the direction of internality. This is not statistically significant. Thus, in college number one, voc-tech students neither become more internal nor more external. Table III-3-2 indicates that developmental students with voc-tech majors at college number two with a Fall ANSIE of 11 can be expected to shift one half a point in the direction of externality. Table III-3-3 indicates that voc-tech students scoring 11 on the Fall ANSIE can

TABLE III-4: Expected Locus of Control Gains for Voc-Tech and Academic Non-Developmental Students at College 1

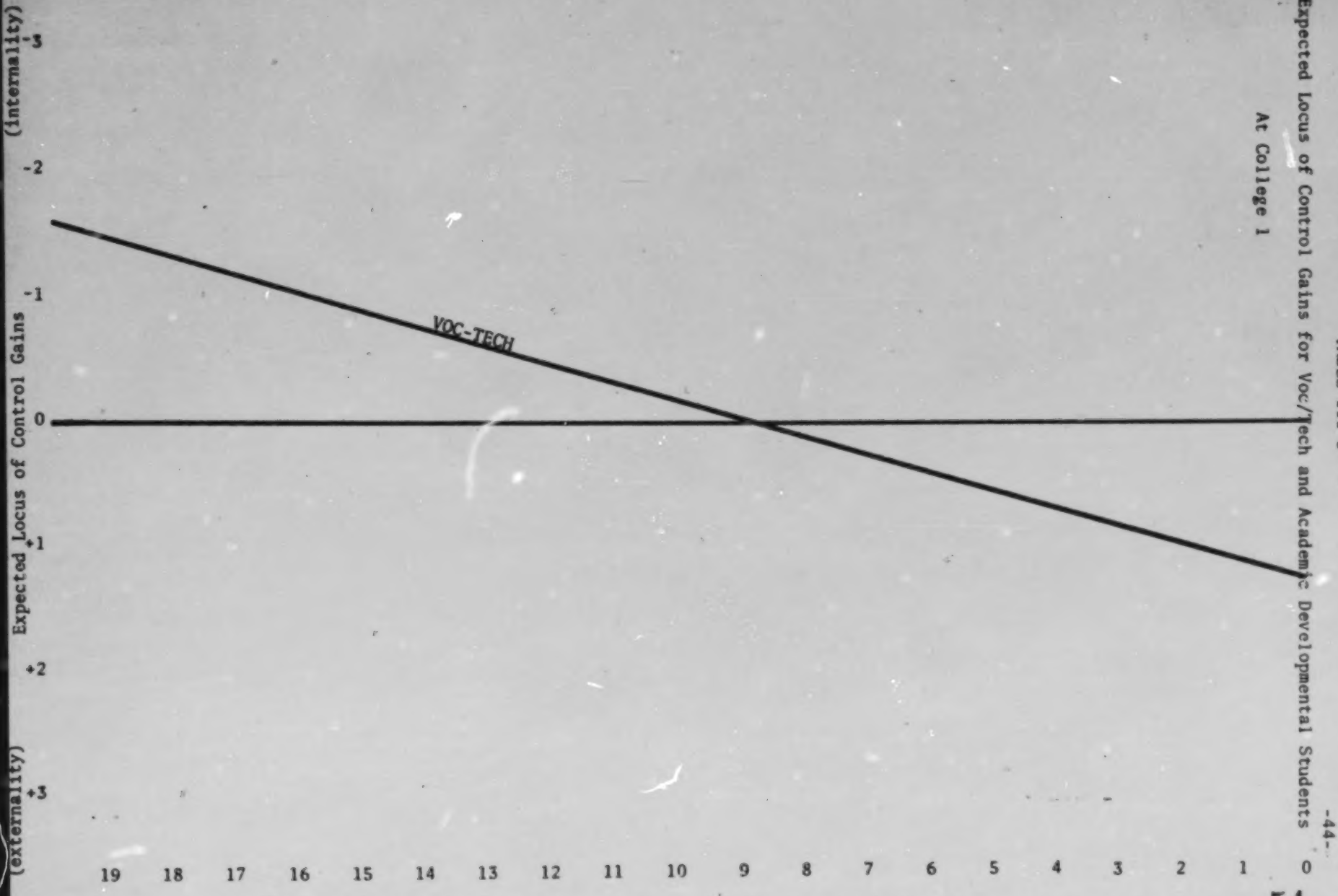


TABLE III-3 [illegible]

Expected Locus of Control Gains for Voc/Tech and Academic Developmental Students At College 1

TABLE III-3:2 Expected Locus of Control Gains for Voc-Tech and Academic Developmental Students at College 2

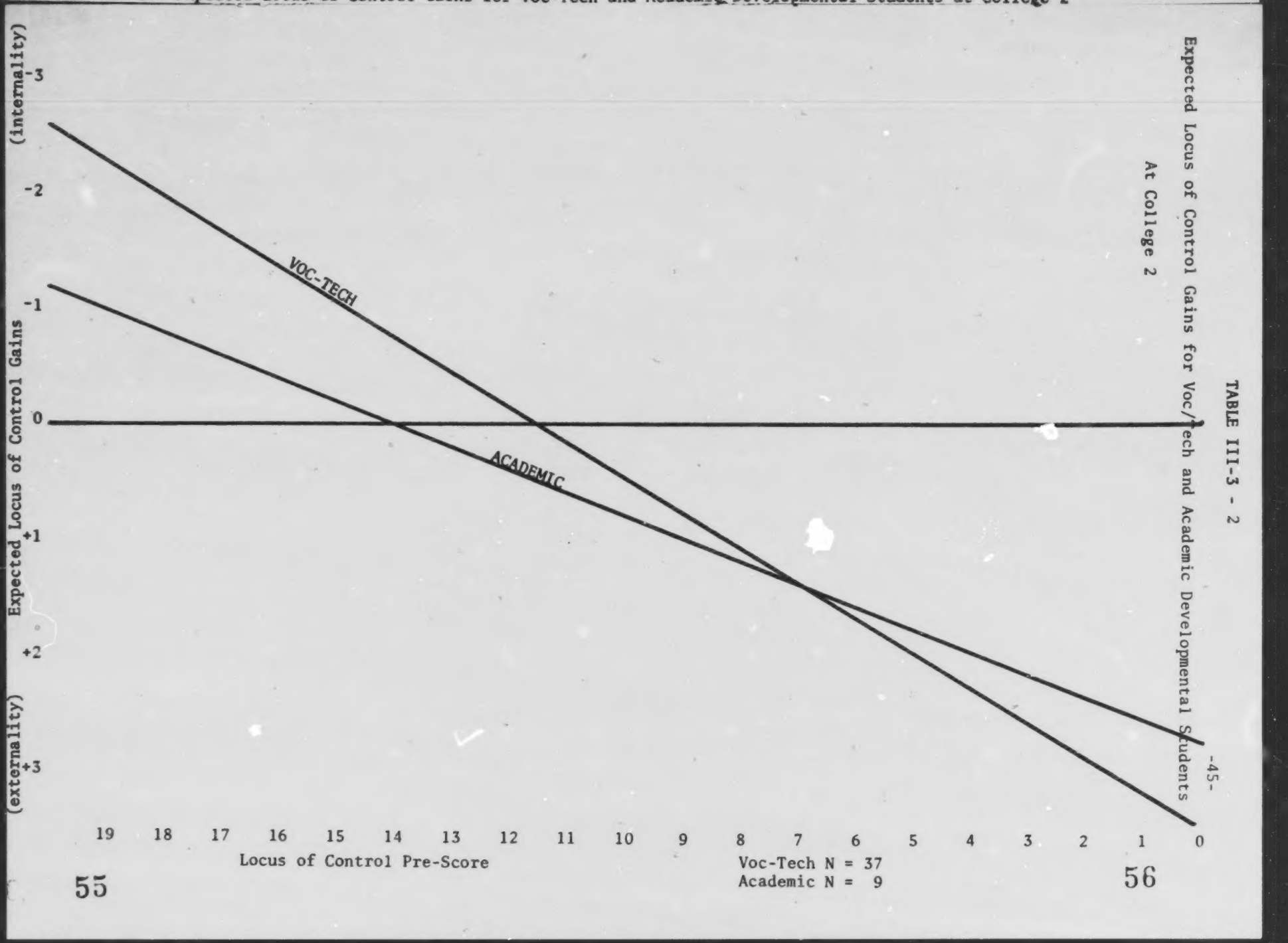


TABLE III-3 - 2

Expected Locus of Control Gains for Voc/Tech and Academic Developmental Students At College 2

TABLE III-3:3 Expected Locus of Control Gains for Voc-Tech and Academic Developmental Students at College 3

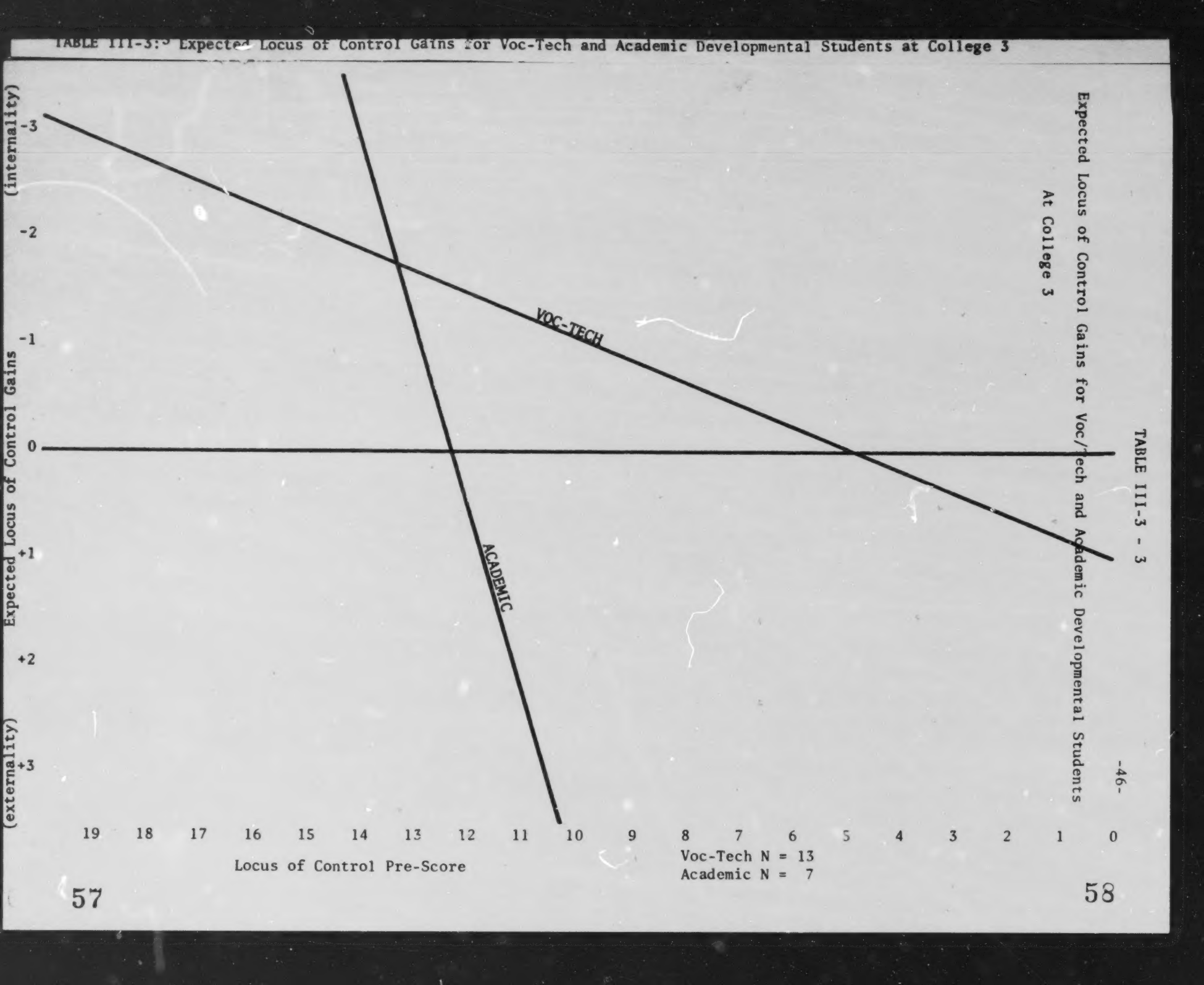


TABLE III-3:4 Expected Locus of Control Gains for Voc-Tech and Academic Developmental Students at College 4

TABLE III-3 - 4

Expected Locus of Control Gains for Voc/Tech and Academic Developmental Students At College 4

Expected Locus of Control Gains for Voc-Tech and Academic Developmental Students at College 5

TABLE III-3 -5

Expected Locus of Control Gains for Voc/Tech and Academic Developmental STudents

At College 5

TABLE III-3: 6 Expected Locus of Control Gains for Voc-Tech and Academic Developmental Students at College 6

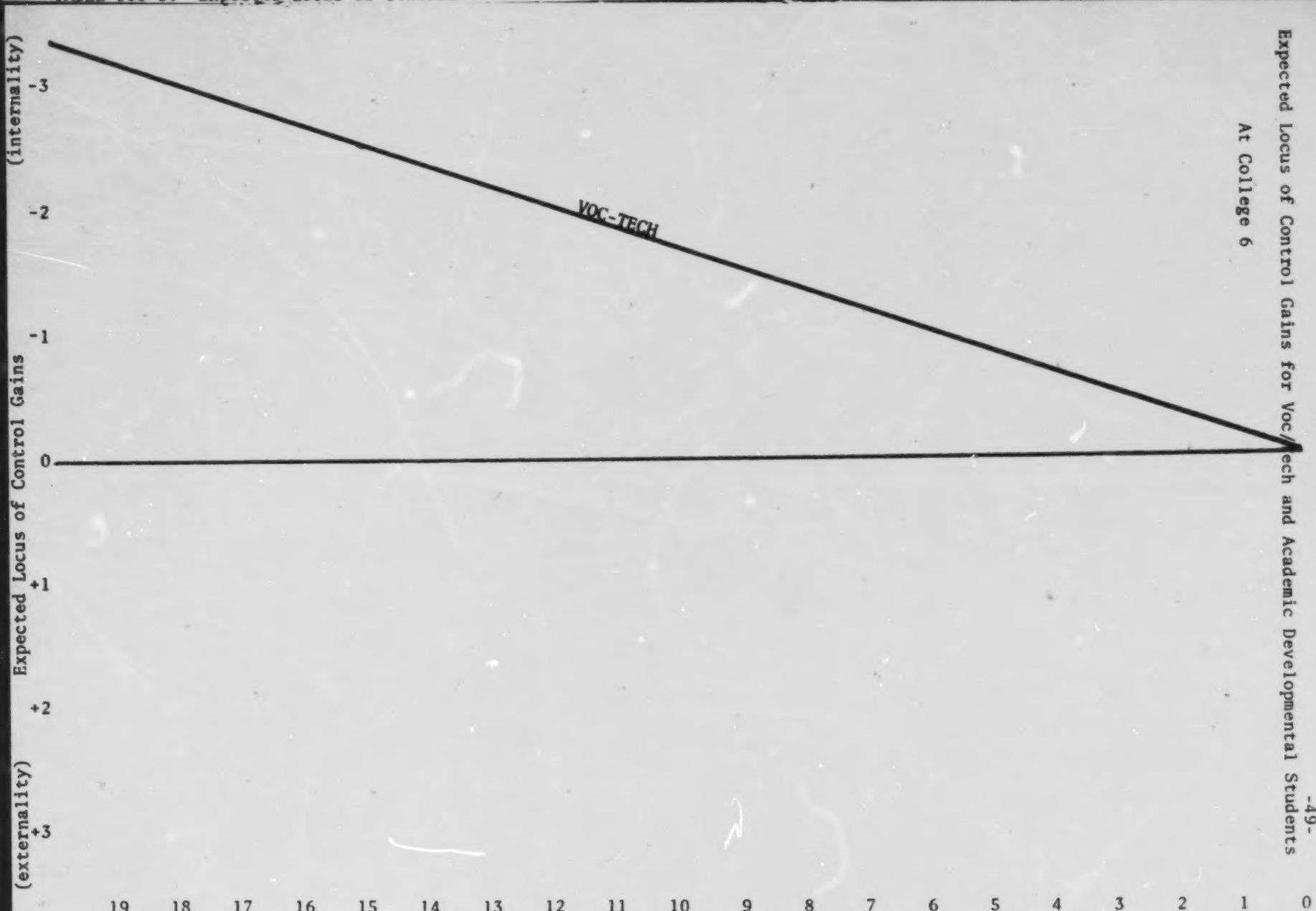


TABLE III-3 - 6

Expected Locus of Control Gains for Voc/Tech and Academic Developmental Students At College 6

be expected to experience internality shifts of one and a half points while academic students can be expected to experience externality shifts of two and a half points. The difference between the gains where the pretest level is 11 is statistically significant. Tables III - 3 - 4, III - 3 - 5, and III - 3 - 6 cannot be used for this comparison because of insufficient data. These tables indicate that developmental voc-tech students tend to become slightly more internal over time in school than do the academic major students.

We now turn our attention to the non-developmental portion of the sample. We note in Table III-4-1 that non-developmental academic students shift slightly in the direction of internality while voc-tech students shift in the direction of externality slightly,if at all. Table III-4-2 indicates that in college number two, voc-tech students scoring 11 on the Fall test can be expected to shift two points in the direction of internality, while similar academic major students can be expected to shift only one point in that direction. In college number three, both the voc-tech and academic students scoring 11 on the Fall ANSIE can be expected to experience an externality shift of about one point. Tables III-4-4 and III-4-6 cannot be used for purposes of this comparison because of insufficient data. Table III-4-5 indicates that voc-tech students with Fall ANSIE scores of 11 at school number five can be expected to shift two points in the direction of internality while similar students with academic majors can be expected to shift slightly in the direction of externality. These differences are statistically significant. Thus it appears that non-developmental students who have academic majors shift in the direction of externality, especially in college number two and college number five.

TABLE III-3-1 Expected Locus of Control Gains for Voc-Tech and Academic Developmental Students at College 1

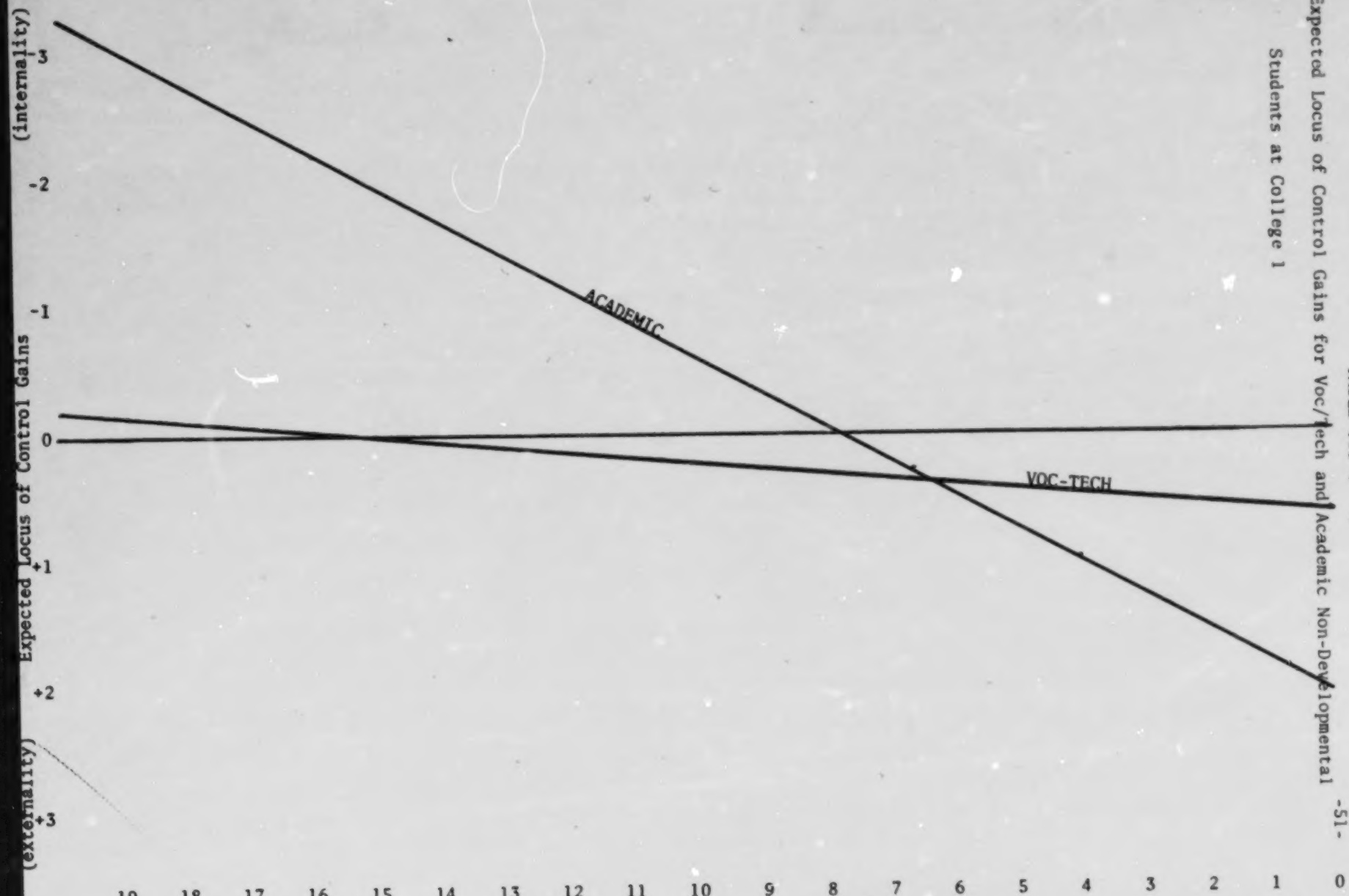
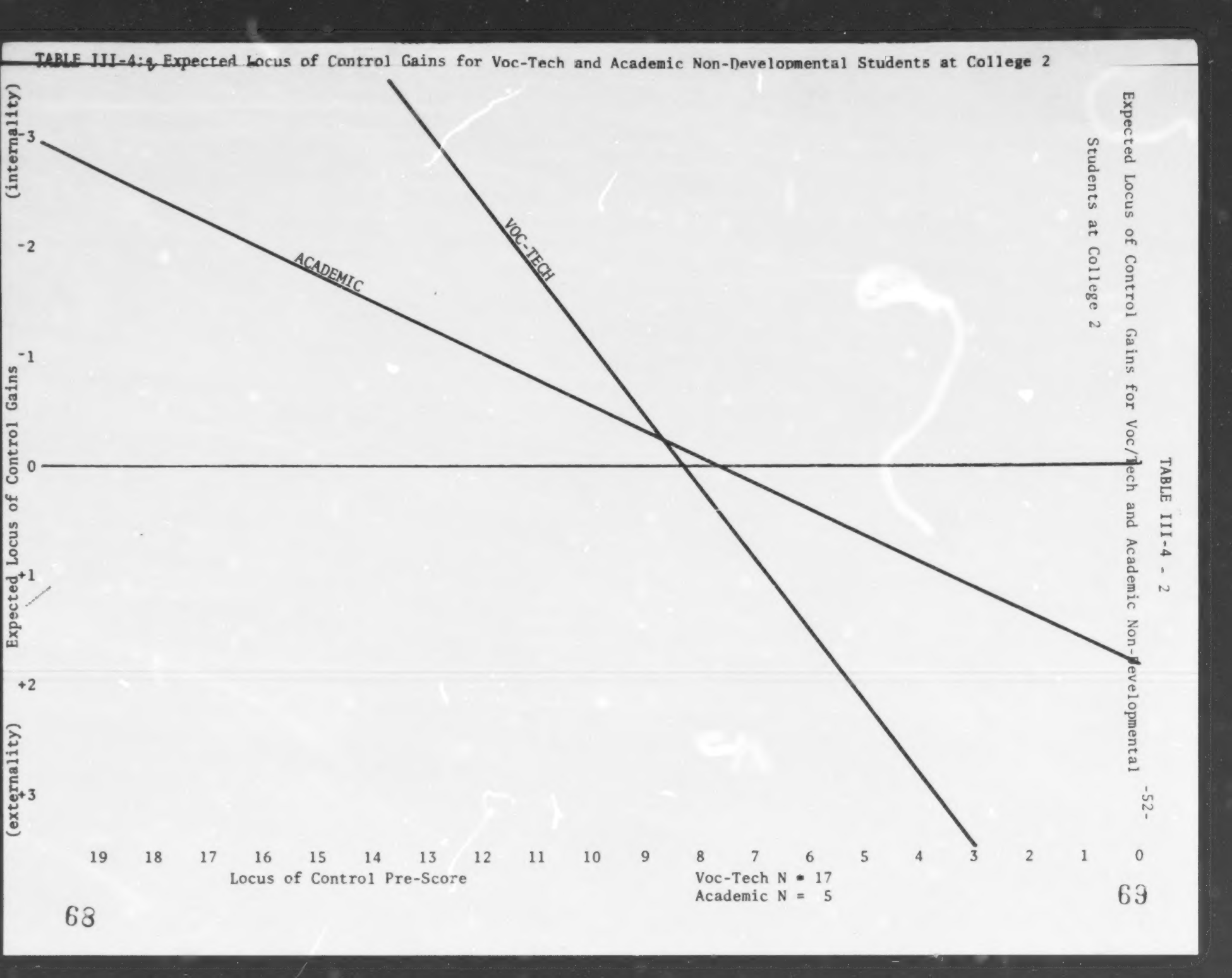


TABLE III-4 - 1

Expected Locus of Control Gains for Voc/Tech and Academic Non-Developmental Students at College 1

TABLE III-4:a Expected Locus of Control Gains for Voc-Tech and Academic Non-Developmental Students at College 2



Expected Locus of Control Gains for Voc/Tech and Academic Non-Developmental Students at College 2

TABLE III-4 - 2

TABLE III-4: Expected Locus of Control Gains for Voc-Tech and Academic Non-Developmental Students at College 3

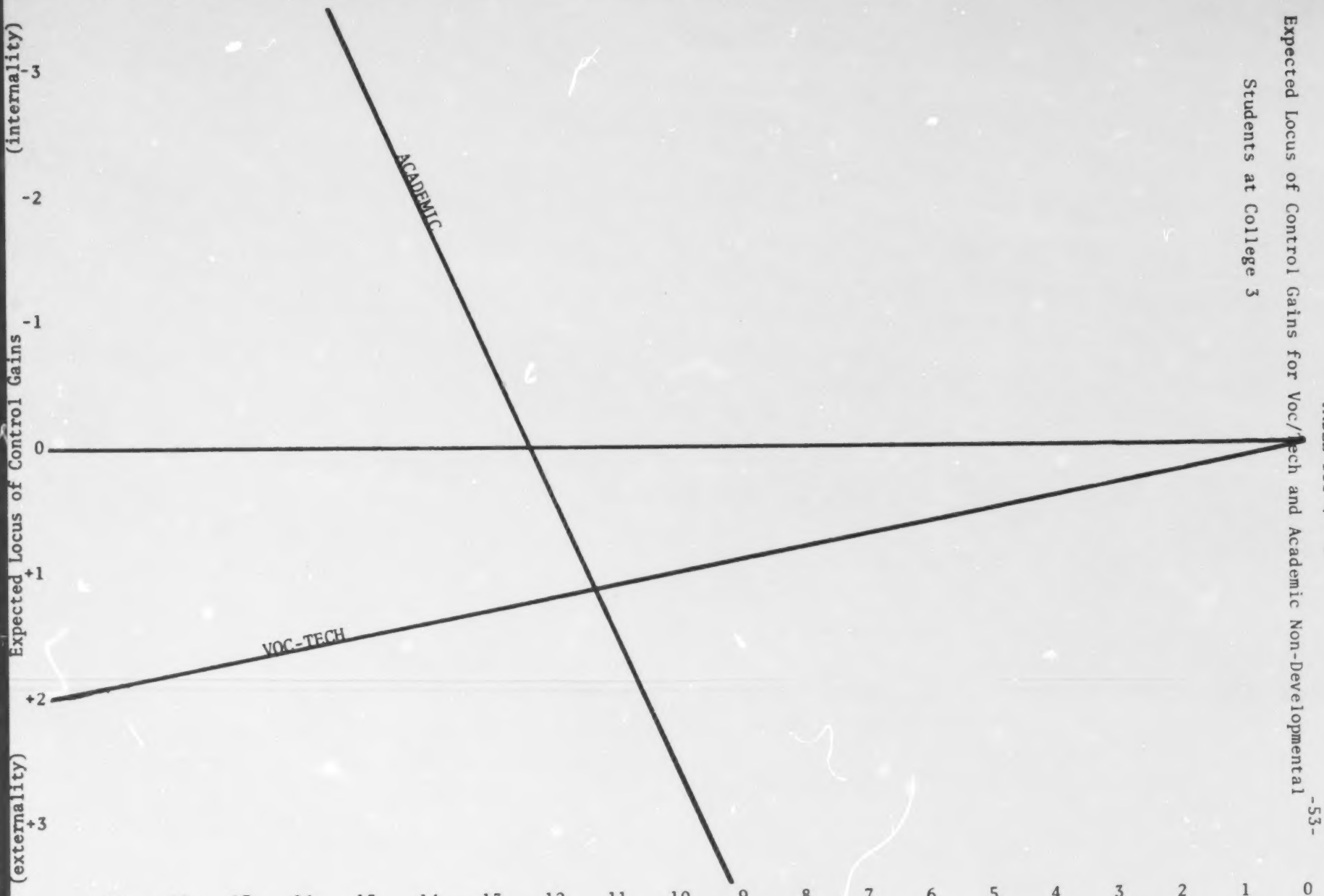
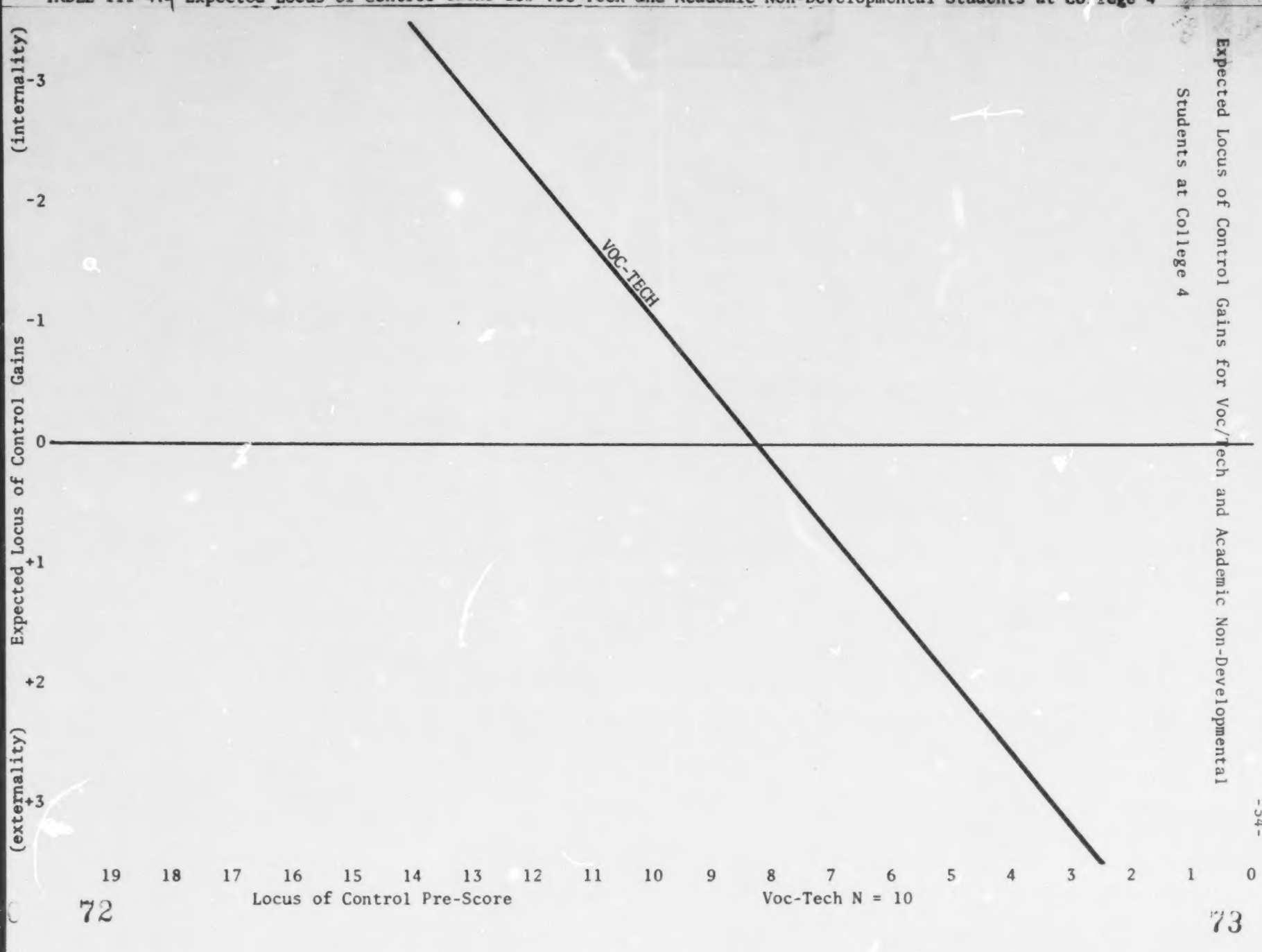


TABLE III-4 - 3

Expected Locus of Control Gains for Voc/Tech and Academic Non-Developmental Students at College 3

TABLE III-4: Expected Locus of Control Gains for Voc-Tech and Academic Non-Developmental Students at College 4



Expected Locus of Control Gains for Voc/Tech and Academic Non-Developmental Students at College 4

TABLE III-4 - 4

TABLE III-4:5 Expected Locus of Control Gains for Voc-Tech and Academic Non-Developmental Students at College 5

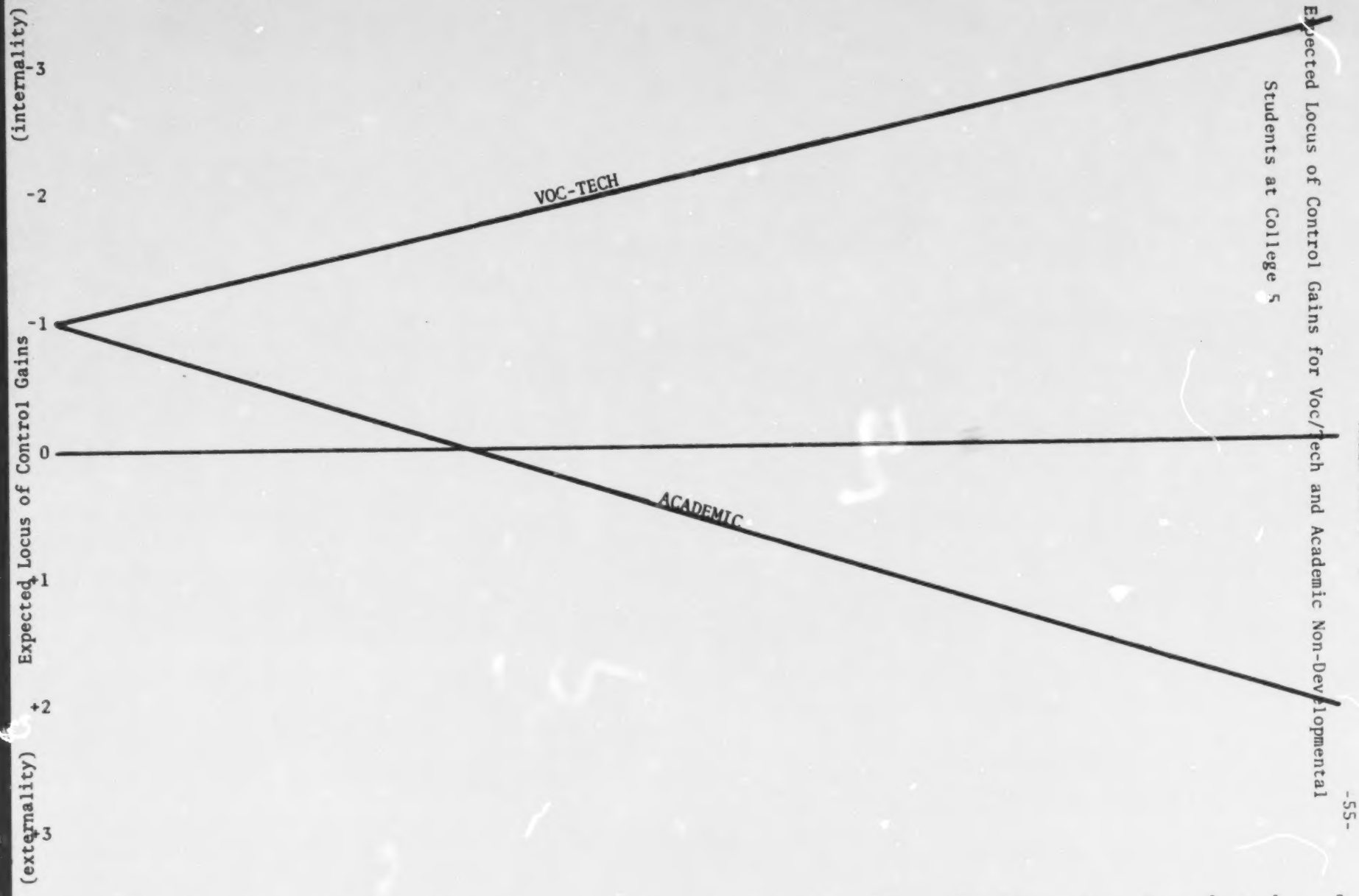
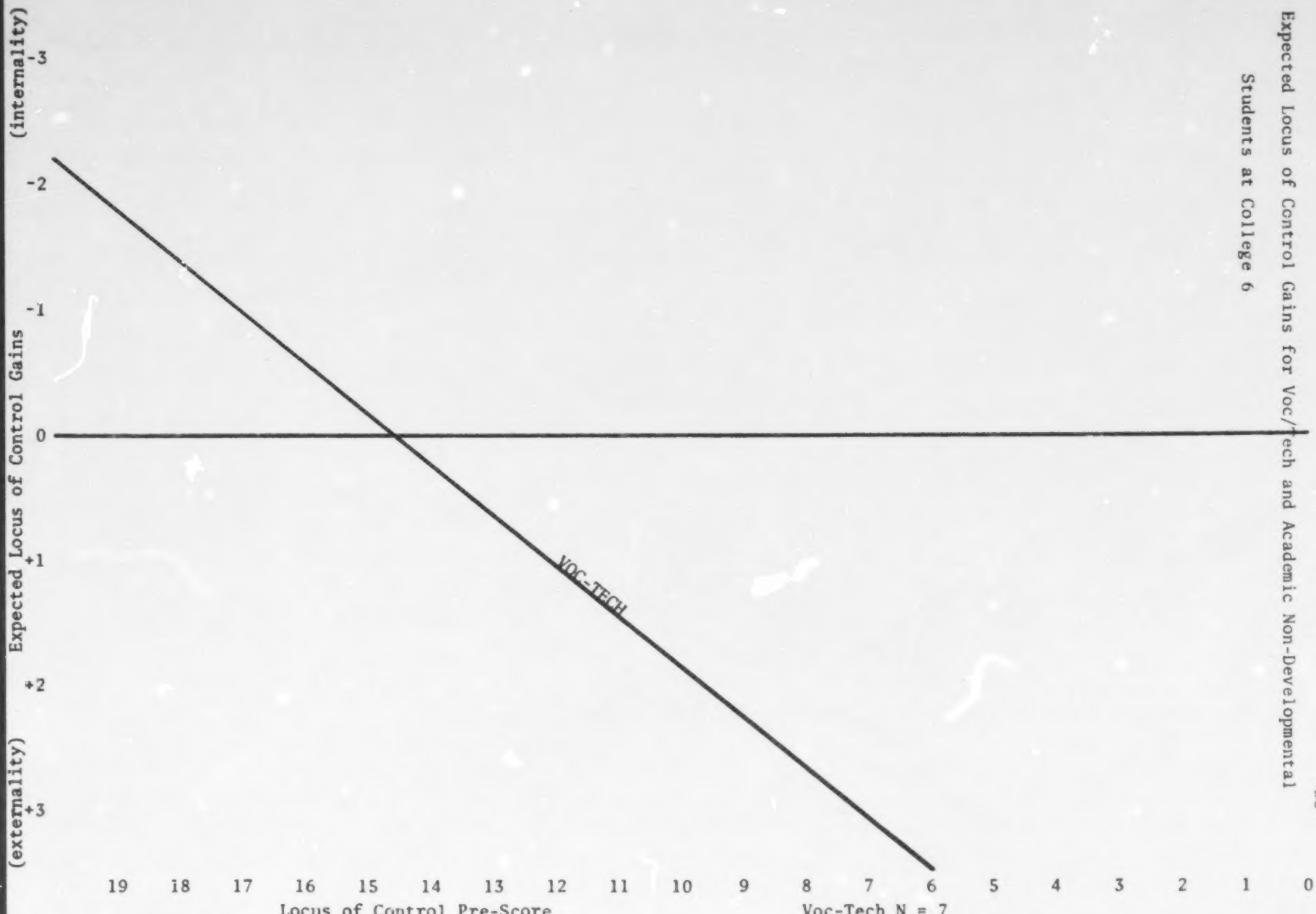


TABLE III-4 - 5

Expected Locus of Control Gains for Voc/Tech and Academic Non-Developmental Students at College 5

TABLE III-4: 6 Expected Locus of Control Gains for Voc-Tech and Academic Non-Developmental Students at College 6



Expected Locus of Control Gains for Voc/Tech and Academic Non-Developmental Students at College 6

TABLE III-4 - 6

Institutional Environment Effects

We are concerned here with the question of whether academic students attending vocationally oriented colleges are at more of a disadvantage than those who attend academically oriented colleges, and whether students with vocation majors who attend academically oriented colleges are more at a disadvantage than those who attend vocational oriented colleges. We began by classifying students as either vocational, academic or undecided depending on the nature of their officially declared programs of study. We then classified them as either attending a vocationally or academic oriented college. By combining these into a single two-by-two matrix, we were able to then classify students as to the dissonance or consonance of their majors. We began by asking the question:

> Within each college, are the expected internality shifts greater for consonant major students than for dissonant major students?

We tested this hypothesis for students with Fall ANSIE scores of four, eleven and sixteen. The results of these comparisons are presented in Table IV - 1.

The table indicates that the internality shifts are greater for consonant major students only in college number four for students having Fall ANSIE scores of eleven and 16 and for students in college number two for students having Fall ANSIE scores of 16. Presumably similar shifts would occur for students scoring near these groups on the Fall ANSIE test. These findings suggest that consonnance of major has no consistent benefit in the area of internality.

TABLE IV - 1

EXPECTED ANSIE GAINS* FOR STUDENTS WITH DISSONANT AND CONSONANT MAJORS WITH THREE LEVELS OF INITIAL ANSIE PERFORMANCE

COLLEGE NUMBER	TYPE OF MAJOR	EXPECTED GAINS BY INITIAL PERFORMANCE SCORES		
		Fall ANSIE of 4	Fall ANSIE of 11	Fall ANSIE of 16
1	DISSONANT MAJOR	+ .38	-1.91	-3.44
1	CONSONANT MAJOR	+ .73	- .24	- .93
2	DISSONANT MAJOR	+1.17	- .65	- .69
2	CONSONANT MAJOR	+2.28	- .48	-2.29
3	DISSONANT MAJOR	+2.24	+1.93	-3.16
3	CONSONANT MAJOR	+1.19	- .48	-1.71
4	DISSONANT MAJOR	+1.78	- .28	-1.61
4	CONSONANT MAJOR	-2.48	-3.37	-4.22
5	DISSONANT MAJOR	-1.55	-1.71	-1.75
5	CONSONANT MAJOR	+1.97	+ .64	- .31
6	DISSONANT MAJOR	n.d.	n.d.	n.d.
6	CONSONANT MAJOR	n.d.	n.d.	n.d.

* negative numbers indicate internality shifts.

In order to determine whether there had been more change toward internality among students attending more open colleges, the project staff devised a classification system for rating the organizational climates of the six colleges. This part of the analysis became the dissertation work of one of the members. A panel of judges sorted the items of the Institutional Goals Inventory into groups based on the open organization developed by Oscar Mink and James Shultz. The result was the creation of three general indicators of organizational climate: (1) internal responsiveness (2) external responsiveness (3) unity . Colleges were then assigned ranks according to the level of openness reflected by the responses to students about these three indicators. College number 2 ranked as the most closed and college number 4 ranked as the most open.

Expected internality gains were then computed for each college using the grand mean of the Fall ANSIE as the pre-score. The expected gains were:

College 1	- .689
College 2	+ .733
College 3	+ .107
College 4	-1.098
College 5	- .140
College 6	-1.148

In this comparison, a negative value indicates a shift towards internality. The greatest shifts occurred in colleges number four and number six, the colleges scoring most open on our index. Colleges scoring most closed were colleges numbers two and three. Both of these colleges produced shifts towards externality. We therefore conclude that open colleges show the greatest gains in internality.

Locus of Control Effects

In this part of the study we are concerned with the question of whether internality facilitates career orientations and attainments. We first correlated internality scores with CGPA and found statistically significant relationships in all six colleges. But we are primarily interested in the question of whether students who experienced shifts in internality tended to benefit in terms of their levels of performance. We found that the grade point average of students who shifted two or more points in the direction of externality to be 2.54 and the grade point average of students who shifted two or more points in the direction of internality to be 2.65. This difference was small enough to be due to chance.

We then compared students with respect to the degree of congruence between stated career plans and their expressed occupational interests. We used the Ohio Vocational Interest Survey (OVIS) to produce a three dimensional scheme for classifying occupational titles. The OVIS is based on on an analysis of the 35,550 entries listed in the Department of Labor's Dictionary of Occupational Titles (1965). Jobs are classified in terms of their required levels of complexity and involvement with people, data and things. Occupational orientations are often inferred from this system.

In the present study, students were given a recalibrated version of the OVIS and then rated according to their measured and expressed interest in data, people and things using the Dictionary of Occupational Titles system. They were then asked questions about their realistic and idealistic job preferences and plans. The responses to these questions

were used to obtain indicators of interest (stated rather than measured) in the areas of data, people and things. These two indicators were then compared in order to obtain an index of congruence between measured and stated interests. A series of independent variables were regressed on this index. The best predictors of interest congruence were sex, type of major and decided/undecided major. Internality was not found to be a significant predictor of interest congruence.

The OVIS can be used to produce separate indicators of interests. We related internality to all three indicators; people-orientedness, things-orientedness, and data-orientedness. Internality was not found to be related to any of these indicators. We conclude that people oriented students are not more internal.

Discussion

The expected benefits of this project listed on page 10 of this report include:

1. Determine whether the additional interventions increase the proportion of voc-tech students who complete vocational programs.
2. Make available an improved model for vocational education.
3. Compile sets of information for use in the policy-making process of community colleges.
4. Provide experience in goal setting and intervention procedures.
5. Make available information to aid future applicants in making intelligent career choices.
6. Aid counselors in assisting students regarding their expectations for success.

We can use these expected benefits as a vehicle for integrating the findings presented in this section. We shall take them in order.

1. Retention

The intervention seems to have been an unqualified success in reducing the rate of student dropout in the first year. The control condition colleges tended to lose nearly one third of their incoming students during the first year of college. In the full intervention condition, however, only one fifth of the incoming students dropped out during this period.

2. New Educational Model

The intervention effects section seems to indicate that although students can be retained, their grade point averages cannot be expected to improve and they cannot be expected to become more internal. Indeed the average student in the full intervention setting can be expected to shift slightly in the direction of externality. This finding suggest that externality may be the result of programs that are dead end in nature. In many community colleges students are being "heated up" rather than being "cooled out" as they go through the first year. Our data indicate that this process can be reversed where colleges participate in goal selection programs.

3. Policy Information

The first set of graphs provided in this section enable us to make judgements about the performance of different kinds of students in different kinds of programs. Thus we know something about what to expect in each of the six colleges. College number four seems to excell while college number two seems to lag behind. Perhaps additional program development work needs to be done in this college. Perhaps there are lessons to be learned from college number four. Colleges now have available to them a working data set that is constantly being reanalyzed and interpreted for policy purposes.

The second set of figures presented in this section indicates that different kinds of students need different kinds of counseling. In college number 5, for instance, academic students who began the school year with high internality scores tended to shift a full two points in the direction of externality while voc-tech students who entered with high internality scores tended to shift two points in the direction of internality. Table III - 4 - 5 suggests that where voc-tech programs have a great deal of dynamism, externality can be overcome. Table III - 4 -2 suggests that where voc-tech programs are weak, the problem of externality is insoluble. The policy implications of this are clear. Build strong voc-tech programs and internality will result.

4. New Intervention Procedures

The Reality Therapy concept has been proven to be an invaluable aid to secondary school teachers in the United States. Our experience supports the idea that it can be an invaluable aid to community college counselors. We have shown that counselors can significantly reduce the rate of dropout when they practice counseling for internality along with an individualized instruction learning program.

5. & 6. Provide data for Career Counselors

Our data indicate that counselors who use locus of control scores as indicators of people orientedness and general merit may be doing the student body a disservice. Although still in need of external confirmation, our findings fail to support the idea that gains in internality can be used as an indicator of gains in productivity. Indeed, academic major students tended to shift in the direction of externality over time in college. We

suspect that expectations that internality can be consciously induced are unfounded. Our data indicate that internality scores are very stable, perhaps as stable as grade point averages or I. Q. scores.

Summary

This study is about performance. How much can performance be improved by intervention? How important is the institutional environment? Can performance be raised by raising internality? We are now in a position to provide some qualified answers to these questions.

There seems to be little that counseling and instruction interventions can do to arrest the decline of performance indicators in community colleges. Performance scores seem to be capable of resisting even the most conscious of intervention strategies.

The institutional environment seems to have an overwhelming effect on the behavior of community college students. Academic major students do not seem to be at a disadvantage at vocational colleges. Rather, the existence of a particularly progressive vocational preparation program seems to be an advantage for the academic and voc-tech student alike.

Internality is important for academic performance for reasons not yet fully understood. Internal students may be more successful because they are simply ahead of the achievement game. Perhaps they only learn to play at the role of conforming student in order to achieve. Perhaps locus of control is in reality only an indicator of a student's social desireablity. Additional research on this and related issues is sorely needed.

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APPENDICES

A. The Adult Form of the Nowicki-Strickland Internal-External Scale

B. Basic Information Form with Group Results Included:

-- Student Form
-- Faculty and Administrator Form

C. Objective Characteristics of Community Colleges Questionnaire

D. Voc/Tech Project Definition of Individualized Instruction: A Checklist Developed by Barbara P. Washburn and Bart Herrscher

and

Creating an Environment for Learning: Personalized Systematic Instruction Inventory (Previous Checklist revised) by Barbara P. Washburn and Oscar G. Mink

E. Selected Publications and Reprints

THE ADULT FORM OF THE NOWICKI-STRICKLAND INTERNAL-EXTERNAL SCALE (ANS-IE)

Catherine A. Christner

Variable

The impetus for the development of the locus of control construct came from Rotter's 1954 book, Social Learning and Clinical Psychology. The refinement of the construct is delineated in Rotter, Seeman and Liverant (1962), Rotter (1966), and Rotter, Chance and Phares (1972).

Internal-external locus of control refers to the extent to which persons perceive contingency relationships between their actions and their outcomes. Those who believe that they do have some control over their destinies are called "internals," i.e., they believe that some control resides within themselves. "Externals," on the other hand, believe that their outcomes are directed by agents or factors extrinsic to themselves--e.g. fate, luck, chance, or powerful others.

For detailed review of the internal-external concept, the reader is referred to Joe (1971), Lefcourt (1966), and Rotter (1966). These reviews give a large quantity of studies which verify the validity of the internal-external locus of control concept.

Description

The majority of locus of control research has used the Rotter I-E Scale (Rotter, 1966) and research has borne out the considerable validity of the internal-external control concept. In recent years, this scale has come under much criticism. Several investigators (Gurin, Gurin, Lao, and Beattie, 1969; Lao, 1970; Levenson, 1972 and 1973; MacDonald, 1973; and Mirels, 1970) have presented very good evidence--mainly through factor analysis--of the multidimensionality of the I-E Scale. It confounds personal, social, political, and ideological causation.

Although Rotter (1966) initially reported otherwise, the I-E Scale has been shown to consistently relate to social desirability responding and to the denial of psychopathology (Altrocchi, Palmer, and Davis, 1968; Cone, 1971; Feather, 1967; Gold, 1968; Goss and Morosko, 1968; Joe, 1971; and Lefcourt and Wine, 1969).

The I-E Scale's force-choice format and difficult reading level make it difficult to use with non-college educated adults. This affects the generalizability. For these three major reasons, the Nowicki-Strickland Scale for Adults (ANS-IE, Nowicki and Duke, 1973) was developed. This scale was developed from the Children's Nowicki-Strickland Internal-External Scale (CNS-IE, Nowicki and Strickland, 1973). This scale has shown very acceptable psychometric characteristics. The alterations of the CNS-IE consisted mainly of changing children to people and some change of tense of some items. Items are suitable for fifth grade reading level (Nowicki and Duke, 1973). The ANS-IE consists of 40 items answered either yes or no. (Score equals number of external items endorsed.)

Administration

The ANS-IE is a self-report measure and can be completed in approximately 15 minutes.

Sample

Three groups of college students (total n = 156) and a group of adults (n = 33) from the general community (a suburb of a large metropolitan area in the southeastern part of the United States) were examined in the gathering of psychometric data. The college students participated for credit in their introductory psychology course. They were predominantly members of the middle and upper middle classes according to Hollingshead's (1957) categorization. The community adults were voluntary participants in the study of locus of control in children. They ranged from 26 to 30 years of age and were predominantly members of the upper-lower and lower-middle classes. All subjects were white.

Nowicki-Strickland Scores for High School (CNS-IE), College and Community Subjects (ANS-IE)

Subjects	Mean	Standard Deviation
Grade 9 (n = 87)	13.06	3.98
Grade 10 (n = 115)	13.02	5.32
Grade 11 (n = 90)	12.40	5.02
Grade 12 (n = 87)	11.81	4.84
College (n = 154)	9.06	3.89
Community (n = 33)	10.96	5.61

In addition to these subjects, 577 other subjects were administered the ANS-IE. See Nowicki and Duke (1973) for a testing of these subjects. They include mental patients, low SES subjects, Blacks, etc.

Reliability/Homogeneity

Presented with the scale items at the end of this are the percentages of subjects answering items in the external direction. These data indicate the ANS-IE is moderately homogeneous. Split-half reliabilities ranged from .74 to .86, indicating satisfactory internal consistency, especially since the items are not arranged according to difficulty. Thus, the split-half reliabilities are an underestimate of the true internal consistency reliability. For one group of college subjects (n = 48), test-retest reliability for a six-week period was r = .83, indicating good stability.

Validity

Consistent with results found with the CNS-IE (reported in Nowicki and Strickland, 1973), ANS-IE scores were not significantly correlated with the Marlowe Crowne Social Desirability Scale (Crown and Marlowe, 1964). The results with two of the college student samples (n = 48 and n = 68) were r = .10, df = 47 and r = .06, df = 67.

Nowicki and Duke (1973) have done extensive validation of the ANS-IE. In one college sample (n = 48), the ANS-IE and SAT scores were not significantly correlated (r = .11). They also administered the ANS-IE and Rotter scale to their two college samples and their community sample. This was to establish convergent validity, but to also establish the ANS-IE would be accounting for a unique position of the variance. Their results indicated this (r = .68, df = 47, p = .01; r = .48, df = 37, p = .01). As the authors state, this indicates the scales are measuring the same construct but in a different manner.

Nowicki and Duke (1973) report several other studies indicating the ANS-IE scores relate to psychopathology, anxiety, etc., as social learning theory would predict. Please refer to their study for more details.

Comments

This scale overcomes some of the problems of the Rotter scale--social desirability, denial of psychopathology, a better predictive of achievement behavior, easier to read and understand--but still compares favorably to the Rotter scale as far as validity and reliability are concerned. Also, it compares more favorably than Rotter's scale as a predictive measure based on social learning theory (Rotter, 1954). It further and importantly serves as a measure of control expectancy as well as success expectancy. Since the ANS-IE is an adapted version of the CNS-IE, its generalizability is increased. There is a bibliography of studies which have used the CNS-IE or the ANS-IE available from Nowicki.

ADULT NOWICKI-STRICKLAND SCALE ITEMS, ITEM-DIFFICULTIES, AND ITEM-TOTAL

CORRELATIONS WITH THAT ITEM-MISSING FOR SUBJECTS IN THE COLLEGE AND COMMUNITY SAMPLES

		Item	College (n = 154)		Community (n = 33)	
			Cor.[1]	% E[2]	Cor.[1]	% E[2]
(Y)	1.	Do you believe that most problems will solve themselves if you just don't fool with them?	.04	10	.06	16
(N)	2.	Do you believe that you can stop yourself from catching a cold?	.28	55	.15	32
(Y)	3.	Are some people just born lucky?	.12	31	.35	39
(N)	4.	Most of the time do you feel that getting good grades meant a great deal to you?	.02	17	.33	30
(Y)	5.	Are you often blamed for things that just aren't your fault?	.25	24	.33	28
(N)	6.	Do you believe that if somebody studies hard enough he or she can pass any subject?	.25	31	.15	42
(Y)	7.	Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?	.11	3	.20	46
(Y)	8.	Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?	.01	24	.08	21
(N)	9.	Do you feel that most of the time parents listen to what their children have to say?	.30	45	.36	49
(y)	10.	Do you believe that wishing can make good things happen?	.18	86	.23	14

		Item	College (n = 154) Cor.[1]	College (n = 154) % E[2]	Community (n =333) Cor.[1]	Community (n =333) % E[2]
(Y)	11.	When you get punished does it usually seem it's for no good reason at all?	.02	10	.43	12
(Y)	12.	Most of the time do you find it hard to change a friend's (mind) opinion?	.53	44	.28	40
(N)	13.	Do you think that cheering more than luck helps a team to win?	.23	27	.32	19
(Y)	14.	Did you feel that it was nearly impossible to change your parent's mind about anything?	.48	17	.40	40
(N)	15.	Do you believe that parents should allow children to make most of their own decisions?	.02	6	.38	12
(Y)	16.	Do you feel that when you do something wrong there's very little you can do to make it right?	.43	10	.33	19
(Y)	17.	Do you believe that most people are just born good at sports?	.46	38	.09	47
(Y)	18.	Are most of the other people your age stronger than you are?	.36	20	.07	21
(Y)	19.	Do you feel that one of the best ways to handle most problems is just not to think about them?	.01	1	.03	46
(N)	20.	Do you feel that you have a lot of choice in deciding who your friends are?	.40	6	.19	10

		Item	College (n = 154) Cor.[1]	College (n = 154) % E[2]	Community (n = 33) Cor.[1]	Community (n = 33) % E[2]
(Y)	21.	If you find a four leaf clover, do you believe that it might bring you good luck?	.06	24	.22	14
(N)	22.	Did you often feel that whether or not you did your homework had much to do with what kind of grades you got?	.05	10	.21	19
(Y)	23.	Do you feel that when a person your age is aggry at you, there's little you can do to stop him or her?	.35	6	.31	14
(Y)	24.	Have you ever had a good luck charm?	.03	38	.17	47
(N)	25.	Do you believe that whether or not people like you depends on how you act?	.11	4	.17	10
(N)	26.	Did your parents usually help you if you asked them to?	.04	1	.09	46
(Y)	27.	Have you felt that when people were angry with you it was usually for no reason at all?	.39	7	.44	10
(N)	28.	Most of the time, do you feel that you can change what might happen tomorrow by what you do today?	.01	1	.08	12
(Y)	29.	Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?	.31	21	.28	32
(N)	30.	Do you think that people can get their own way if they just keep trying?	.25	41	.07	16

		Item	College (n = 154) Cor.[1]	College (n = 154) % E[2]	Community (n = 33) Cor.[1]	Community (n = 33) % E[2]
(Y)	31.	Most of the time do you find it useless to try to get your own way at home?	.09	6	.60	16
(N)	32.	Do you feel that when good things happen they happen because of hard work?	.10	24	.28	26
(Y)	33.	Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?	.45	21	.53	35
(N)	34.	Do you feel that it's easy to get friends to do what you want them to do?	.31	51	.28	23
(Y)	35.	Do you usually feel that you have little to say about what you get to eat at home?	.56	10	.29	28
(Y)	36.	Do you feel that when someone doesn't like you there's little you can do about it?	.14	20	.53	46
(Y)	37.	Did you usually feel that it was almost useless to try in school because most other children were just plain smarter than you are?	.16	3	.26	16
(N)	38.	Are you the kind of person who believes that planning ahead makes things turn out better?	.17	7	.33	14
(Y)	39.	Most of the time, do you feel that you have little to say about what your family decides to do?	.27	10	.39	25
(N)	40.	Do you think it's better to be smart than to be lucky?	.30	7	.04	20

[1]Cor. = correlation

[2]% E = % answering in external direction

ANS-IE

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GROUP RESULTS

BASIC INFORMATION FORM Appendix B

Name: STUDENT

1. Social Security Number: _____-____-_____

2. College (circle one): 83 (13%) Col. 1, 181 (29%) Col.2, 77 (12%) Col.3, 120 (19%) Col.4, 79 (13%) Col.5, 90 (14%) Col.6, Col.7

3. Developmental Studies: 1. Yes 396 (63%), 2. No 236 (37%)

4. List your Major _____

5. How highly do you value your proposed major? Answer by circling one of the following 5 numbers:

9 (2%)	16 (3%)	62 (12%)	218 (41%)	226 (43%)
1	2	3	4	5
Not at all Valued	Only Slightly Valued	Somewhat Valued	Highly Valued	Very Highly Valued

6. How highly do people around the college value your proposed major? Answer by circling one of the following 5 numbers:

1	2	3	4	5
Not at all Valued	Only Slightly Valued	Somewhat Valued	Highly Valued	Very Highly Valued
11 (2%)	45 (9%)	190 (37%)	210 (40%)	63 (12%)

7. Do you plan to transfer to a four year college upon finishing your program of study at this college? 1. Yes 277 (44%), 2. No 132 (21%) 3. Don't Know 217 (35%)

DIRECTIONS: Please answer the following questions by placing a mark by the most appropriate answer for you. If you personally object to any of the questions, please feel free to leave them blank. If you wish to comment on any of the questions, please do.

8. Sex: 1. Male 311 (49%), 2. Female 322 (51%)

9. Age in years: _____ Range from 17-58 $\bar{X}$ = 22.66 S.D. 7.81

10. Racial-Ethnic Background:

1. Afro-American (Black) 91 (14%)
2. Euro-American (White) 306 (48%)
3. Mexican-American (Chicano) 220 (35%)
4. Native-American (Indian) 1
5. Oriental-American (Japanese, Chinese) 1
6. Other (Please Specify) 12 (2%)

11. Are you financially independent from your parents?

1. Yes 271 (44%) 2. No 351 (56%)

12. Please estimate your family income. If you marked "yes" to number 11 above, estimate the combined income of you and your spouse (if married). If you marked "no" to number 11 above, estimate your parent's combined income:

1. 39 (8%) 0 - 1,999
2. 76 (15%) 2000-3,999
3. 76 (15%) 4000-5,999
4. 43 (9%) 6000-7,999
5. 42 (8%) 8000-9,999
6. 45 (9%) 10,000 - 11,999
7. 51 (10%) 12,000 - 13,999
8. 41 (8%) 14,000 - 15,999
9. 91 (18%) 16,000 +

13. Please indicate the approximate per cent (%) of your educational costs which are provided by yourself: _____

14. Please indicate the approximate per cent (%) of your educational costs which are provided by your parents: _____

15. Please indicate the approximate per cent (%) of your educational costs which are provided by sources other than yourself or your parents: _____.

16. Your father's education (circle the highest grade completed).

A) Grade School								B) High School				C) College				
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17+
8	3	10	28	21	15	50	23	48	26	30	23	151	29	24	9	29	26

17. Your mother's education (circle the highest grade completed).

A) Grade School								B) High School				C) College				
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17+
5	4	14	19	19	21	31	14	48	27	28	48	205	15	41	6	18	13

18. Please indicate your parents' occupational level by checking the best blank in the first column for your father, and checking the best blank in the second column for your mother:

	FATHER	MOTHER	
1)	49 (9%)	319 (57%)	Not employed outside the home
2)	49 (9%)	1	Farmer (Rancher)
3)	58 (11%)	31 (6%)	Unskilled (laborers, seasonal workers)
4)	102 (19%)	20 (4%)	Semi-skilled (machine operators, assembly-line workers, telephone oper.)
5)	37 (7%)	58 (10%)	Service (police, restaurant workers, beauticians)
6)	94 (18%)	9 (2%)	Skilled (carpenters, plumbers, key-punch operators)
7)	18 (3%)	62 (11%)	Clerical/Office (Clerk, Secretary)
8)	21 (4%)	20 (4%)	Sales
9)	54 (10%)	25 (4%)	Junior Executive/Manager (store manager, owns small business)
0)	44 (8%)	16 (3%)	Professional or Executive (doctor, lawyer, owns large business)

19. How many hours per week are you employed? 3-60 $\bar{X}$ = 27.76 S.D. 12.24

20. Marital Status:
1) 458 Single (73%)
2) 137 Married (22%)
3) 22 Divorced (3%)
4) 8 Separated (1%)
5) 4 Widowed

21. Number of Children: 1-7 $\bar{X}$ = 2.5 S.D. = 1.36

22. Number of Dependents: 1 - 9 $\bar{X}$ = 2.46 S.D. = 1.60

23. Number of Brothers and Sisters: 1 - 14 $\bar{X}$ = 4.17 S.D. = 2.77

24. Your education (circle highest grade completed)

A) Grade School								B) High School				C) College				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17+
			1			3	7	11	13	15	474	64	30	4	2	3

25. Do you have a high school diploma or equivalent?
629 1. Yes 603 (96%) 2. No 26 (4%)

26. High School Grade Average:
610 1) ___F 2) 10 D (2%) 3) 254 C (42%) 4) 300 B (49%) 5) 46 A (8%)

27. ACT Composite Score: 4 - 29 X = 15.36 S.D. = 5.05

28. SAT Composite Score: ----

29. Semester in this college: 1) 542 1st (88%) 2) 40 2nd (7%) 3) 21 3rd (3%) 4) 11 4th (2%)

30. If you have attended college before, what was your grade average:

1) 2 F (2%) 2) 6 D (5%) 3) 45 C (37%) 4) 52 B (43%) 5) 15 A (12%)

STOP!!!!

WAIT FOR FURTHER INSTRUCTIONS BEFORE CONTINUING.

ANSIE --- $\bar{X}$ = 10.77 Range 1 - 27
S.D. = 4.84

BASIC INFORMATION II

Name: FACULTY AND ADMINISTRATORS

1. Social Security Number: _____ - _____ - _____

2. College (circle one):

42	52	49	44	57	38	
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7
15%	18%	17%	16%	20%	13%	

3. Status at College : 1) Faculty 216 76% 2) Staff 62 22% 3) Board/Community Member 5 2%

4. Sex: 1) Male 175 62% 2) Female 107 38%

5. Age in years: 23 - 70 $\bar{X}$ = 40.5 S.D. = 9.8

6. Racial-Ethnic Background:

1) 6 Afro-American (Black) 2%
2) 239 Euro-American (White) 84%
3) 30 Mexican-American (Chicano) 11%
4) _____ Native-American (Indian)
5) _____ Oriental-American (Japanese, Chinese)
6) 8 Other (Please Specify 3%

7. Highest Degree Earned:

1) 12 H.S. Diploma or Equivalent 4%
2) 6 A.A./A.S. 2%
3) 44 Bachelor's Degree 16%
4) 182 Master's Degree 64%
5) 32 Doctorate 11%
6) 7 Post-Doctorate 2%

8. Years at this college: 1 - 30 $\bar{X}$ = 6.5 S.D. = 4.75

9. Subject or area taught (if none, write "NONE"): _____

ANSIE $\bar{X}$ = 6.47

S.D. = 3.48

Appendix C

College

Respondent

Date

Objective Characteristics of Community Colleges Questionnaire

Directions: We are very eager to have data regarding certain specific "Objective characteristics" of your campus. Most of these data we hope and expect are already available at one or another office on your campus (e.g. registrar's office, business manager's office, etc.). These same questions are frequently asked for by governmental agencies such as TEA, the Coordinating Board, HEW and others. Therefore, this should require only limited additional effort on your part. Please relate all data to a baseline of September, 1975. Please feel free to contact the project if you have any difficulties or questions about any part of this questionnaire.

FACTOR 1

A. Size of endowment_____ _____
(Estimated market value as of September, 1975. If no endowment, indicate 0.)

B. Size of operating budget_____
(Annual expenditure for educational & general purposes, including faculty salaries, administrative expenses, etc.)

C. Faculty/student ratio_____ to _____

D. Mean aptitude level of entering students:

SAT Verbal_____ SAT Quantitative_____ Total SAT_____

or

ACT English_____ACT Math_____ACT Social Studies_____

ACT Natural Sciences_____ ACT Composite_____

E. Total instate tuition and other required fees per academic year_____

F. Percentage of faculty holding doctorate degree_____

G. Percentage of faculty holding masters degree_____

H. Percentage of faculty holding bachelors degree_____

FACTOR 2

A. Library size_____(Total number of volumes in school library.)

B. Relative library size (total number of volumes per total enrollment)

_____ _____ to _____
Volumes Enrollment

C. Total student enrollment_____

Number of students in academic curriculum_____
Number of students in vocational/technical curriculum_____
Number of students in Developmental Studies Program_____

D. Curriculum variety_____ (Total number of different major fields or programs offered, for which a degree or certificate might be obtained.)

E. Percentage of total budget allocated to academic program_____

F. Percentage of total budget allocated to vocational/technical program_____

FACTOR 3

A. Growth rate_____% (Percentage increase in total enrollment between September, 1970, and September, 1975.)

B. Number of students successfully completing their program in 1975:

Associate degree_____
Certificate of Graduation_____
Other (1-year, vocational)_____

FACTOR 4

A. Percentage of males in the student body_____%

B. Percentage of out of state students_____%

C. Technological emphasis_____to _____
(Number of vocational/technical majors relative to total number of majors offered.)

FACTOR 5

A. Realistic orientation_____%
(For this and other orientations, see Table below. Percentage of majors in realistic categories.)

B. Intellectual orientation_____%
(Percentage of majors in intellectual categories.)

C. Social orientation_____%
(Percentage of majors in social categories.)

D. Conventional orientation_____%
(Percentage of majors in conventional categories.)

E. Enterprising orientation_____%
(Percentage of majors in enterprising categories.)

F. Artistic orientation_____%
(Percentage of majors in artistic categories.)

G. Homogeneity of the environment_____%
(The difference between the highest and lowest percentages of personal orientations at the college, e.g., if there were a 62% Realistic Orientation and a 12% Artistic orientation representing the highest and lowest percentages, then the homogeneity would be 50%.)

H. Percentage of black students_____%
Percentage of Mexican American students _____%
Percentage of Anglo students _____%
Percentage of students 22 years of age or older_____%
Percentage of Indian students_____%
Percentage of Oriental students_____%

FACTOR 6

A. Estimated percentage of students out of those graduating in 1975 who transferred to four-year institutions_____
(Based on proportion of students receiving A.A. degree Spring Term, 1975.)

B. Estimated percentage of students enrolled having permanent residence outside the College's designated service area_____%

FACTOR 7

A. Percentage of students who seek counseling per annum_____%

B. Withdrawal rate within:

Academic programs_____
Vocational/Technical programs_____
Developmental Studies programs (If applicable)_____

College Major Fields Corresponding to Each of Six Personal Orientations [1]

Orientation	Description (from Holland, 1961)	Relevant major fields
Realistic	"masculine, physically strong, unsociable, aggressive... prefers concrete to abstract"	agriculture, agricultural education, physical education, recreation, industrial arts, engineering, forestry, trade, and industry
Intellectual	"task-oriented, intraceptive, asocial, prefers to think through rather than act out; needs to understand"	architecture, biological sciences, geography, medical technology, pharmacy, mathematics, philosophy, physical sciences, anthropology
Social	"sociable, responsible, feminine... needs attention... avoids intellectual problem-solving... orally dependent"	health education, education of exceptional children and mentally retarded, speech correction, education (unclass.), nursing, occupational therapy, physical therapy, scholastic philosophy, social science (general), American civilization, sociology, social work
Conventional	"prefers structured numerical and verbal activities and subordinate roles... conforming ... identifies with power, externals, and status"	accounting, secretarial, business and commercial (general and unclass.), business education, library science, economics
Enterprising	"verbal skills for dominating, selling, leading others... orally agressive"	hotel and restaurant administration, hospital administration, history, international relations, political science, foreign service, industrial relations, public administration
Artistic	"asocial; avoids problems which are highly structured or require gross physical skills... intraceptive... need for individualistic expression"	art education, music education, English and journalism, fine and applied arts (all fields), foreign language and literature (all fields)

[1] Taken from the work of John L. Holland

Name _____

Course _____

School _____

VOC/TECH PROJECT DEFINITION OF "INDIVIDUALIZED INSTRUCTION"[1]

A Checklist Developed by
Barbara P. Washburn and Bart Herrscher[2]

This questionnaire is to be completed by the course instructor. In addition a staff member of the Voc/Tech Project or a designated consultant will interview the instructor, perhaps observe the instructor during a learning sessions, and review the instructor's learning materials.

For this project, "individualized instruction" has been defined to include the following components:

1. Employing a "systems approach" to instruction (Categories A through D).

2. Allowing students a flexible time schedule to master course materials (Category E). (Assumption: Students learn at different rates. The purpose of instruction is to hold mastery consistent and vary the rate.)

3. Student involvement and input as to the objectives of the course to be mastered (Category F).

4. Institutional support systems facilitate operational components of individualized instruction (Category G).

5. Instructor's role as a manager of the course (Category H).

Of the following items, a (yet to be determined) score of "yes" responses constitutes an "individualized" course. There can be no category in which there are all "no" responses. Not all of the items will be weighed equally.

1. The Vocational Technical project (funded by the U.S. Office of Education) is titled: "Impact of Administration, Instruction and Counseling on High Risk Vocational/Technical Students." John Roueche is the Principal Investigator and Oscar Mink is the Project Director.

2. Contributions to this instrument have been made by several members of the faculty of the Department of Educational Administration, University of Texas at Austin. Ben Harris and Kenneth McIntyre have been especially helpful. Drs. Harris and McIntyre are authors of a scale titled Descriptive Observation Record (Instrument F-7). Their scale and the accompanying manual were very useful references in the process of editing and developing the NIMH scale and may be very useful to those persons wanting to develop individualized instruction free of the systems approach. (This instrument was originally developed for the National Institute of Mental Health Project: "The Impact of Instruction and Counseling on Disadvantaged Youth"). The NIMH scale advocates the use of the systems approach to individualized instruction as one aspect of the application of general systems theory to the educational process. Other sub-systems of the learning environment include counseling and the organization's environment.

Individualized Instruction Checklist
Page 2

DIRECTIONS: Please answer each item "yes" or "no." If you wish to clarify any response or item, please do so on the back of the page.

	YES	NO
A. Objectives		
1. Course goals communicating major conceptual and behavioral outcomes are provided in writing for the students a the beginning of the course.	____	____
2. After consultation with students, behaviorally stated end of course (terminal) objectives are communicated in writing to the students. (See Category F.)	____	____
3. After consultation with students, behaviorally stated unit objectives are developed and shared with the students in writing. (See Category F.)	____	____
4. Objectives are written in at least two of the following domains: cognitive (mental skills), affective (feelings or attitudes), psychomotor (manual skills).	____	____
5. At least fifty per cent of the specific course objectives in the cognitive domain involve more than student comprehension of subject content, e.g., interpretation, extrapolation, application, analysis, synthesis, and evaluation. (See Bloom's taxonomy.)	____	____
B. Testing		
1. Test items are developed from the stated course objectives.	____	____
2. Assessment methods of objective achievement such as oral exams, performance tests, situational tests, observations, or checklists may be employed in addition to paper and pencil tests.	____	____
3. Students have the option of taking a comprehensive course exam if they feel that they have sufficient skills to be exempted from the course.	____	____
4. A diagnostic pre-test is given on unit objectives to determine a student's present achievement level.	____	____

Individualized Instruction Checklist
Page 3

	YES	NO
5. Based upon pre-test results, a student may be exempted from a portion of the unit objectives or an entire unit.	____	____
6. Evaluation results are reported according to objectives mastered at a competency level rather than as an average letter or number grade, e.g., correctly solving nine out of ten algebraic equations with one unknown.	____	____
7. For each unit there is an established standard or level of mastery of acceptable learner performance on the objectives that must be met before a student can move on to the next instructional unit.	____	____
8. Criteria referenced mastery levels may be negotiated and modified through instructor-student negotiations. (Pertains to one or more course grades--A, B, or C level)	____	____
9. Students are tested on necessary prerequisite knowledge and skills and are provided materials and instruction necessary to remedy deficiencies.	____	____
10. Prerequisite skill checklists are made available to the students for the course. Or, students know what competencies they must bring to the course in order to do the work of the course.	____	____
11. There is an opportunity for a student to evaluate his own achievement of objectives through self-testing, feedback, and self-correction of errors.	____	____
12. At all times--before, after, and during testing activities--special academic help on a one-to-one basis is available to students needing it (either by the instructor, a paraprofessional, or a student tutor).	____	____

C. Learning Activities

1. In addition to lecture, discussion, and readings, other learning activities are employed, e.g., resource persons, audio-tutorial methods, tutoring, films, role plays, games, field projects.	____	____
2. More than fifty per cent of the course objectives have two or more learning activities--e.g., tutors, lectures, readings, slide tape presentations--available to the students to aid them in mastering course objectives.	____	____

Individualized Instruction Checklist
Page 4

	YES	NO
3. Learning activities allow for students to practice in a variety of modes in order to achieve the stated unit objectives, prior to the formal evaluation situation.	____	____
4. The learning activities are keyed at an appropriate level to the objectives of the course for the sequence of learning--simple to complex.	____	____
5. The objectives are appropriate to the current learning level or competencies of the individual student as well as to the level of his particular sub-group in the target population. (Students are able to learn what they are asked to do.)	____	____
6. Learning activities provide for frequent practice and active participation by students in the learning process. Students "learn by doing."	____	____
D. Revision of Course Materials and Strategies		
1. There is a method of recording information on student error rate on practice items and on unit tests which is used in revising course materials and strategies.	____	____
2. There is information gathered concerning the student's opinion of the content of the course which is used in revising course content.	____	____
3. New information regarding course subject matter is used in revising the course content at least every two years.	____	____
4. Information is gathered on the student's opinion of the methods of instruction employed in the course which is used in revising instructional activities.	____	____
E. Time for Learning		
1. Students are allowed as much time as possible to master a topic.	____	____
2. Students are given the option of taking course tests at different times.	____	____

	YES	NO
3. Students are allowed to restudy unmastered course objectives and retake tests to attain mastery.	____	____
4. There are at least three different tests or methods to measure each objective.	____	____
5. Students may receive an "in progress" or "incomplete" grade at the end of the institutional grading period and be allowed to continue working into a succeeding term to master course objectives.	____	____
6. Students may complete a course prior to the end of the instructional grading period.	____	____
7. Students who wish to go beyond required criteria on certain units or chapters may do so. Or, they may select other options such as building new units or functioning as resource personnel and/or peer tutors.	____	____

F. Student Involvement and Quality of Life Considerations or "School is a Nice Place to be"

1. Student input of topics for subject content is included in the course design.	____	____
2. Students are allowed to help formulate the operation of the course operations by designing and directing some learning activities or sessions.	____	____
3. Students have a choice as to the content "their" course will contain by being allowed to contract with the instructor for mutually agreed upon objectives. (Answer "yes" if a choice is available at any grade level--A, B, or C.)	____	____
4. A general atmosphere of freedom (self-direction) for the student prevails in the classroom. (Student selects learning options, negotiates learning contracts, suggests learning experiences, etc.)	____	____
5. The student is able to contract for the grade he wishes to strive for; renegotiation upward or downward is acceptable.	____	____
6. Instruction includes activities designed to improve interpersonal relation skills of students. (Does the instructor actually build into the course process interpersonal skill development exercises?)	____	____

Individualized Instruction Checklist
Page 6

	YES	NO
7. Students are encouraged to "make friends" and to assist each other.	____	____
8. Provision is made for individual differences in student self-direction, student self-initiative, and student self-responsibility.	____	____
9. Students are given a "rationale" or told "why" course is important to them.	____	____
10. Effort is made to assist students in relating course content to future student goals and interests, such as careers.	____	____

G. Institutional Support

1. There is no "F" grade; the student receives no grade until he has mastered the objectives.	____	____
2. If necessary, students may spend at least a year studying a semester's course. (Institution ruling)	____	____
3. If a student finishes a course early, he is able to move into the next course in the sequence immediately (or another course of his choosing).	____	____
4. Academic policy permits a student to "test out" of all or part of the course through pre-testing.	____	____
5. An attempt is made to match the "learning style" of the student with the instructor and his preferred method.*	____	____
6. Vocational counseling and standardized testing are available to students on a referral or self-referral basis.	____	____
7. Academic counseling, including development of study skills, is available to students on a referral or self-referral basis.	____	____

H. Course Management - This unit is deliberately personalized. We want your perception of course management.

1. As an instructor, do you see yourself as a person in two or more of the following roles: (1) diagnostician; (2) tutor; (3) motivator; (4) catalyst; in short, a manager of learning?	____	____

*Instructor uses this method 50% or more of all contact hours.

Individualized Instruction Checklist
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	YES	NO
2. Are you as the instructor willing to share accountability for learning with the students?	____	____
3. Are your instructional materials portable?	____	____
4. Can your students determine where and when to use the instructional materials?	____	____
5. Can the student control the information flow and repeat if it is not understood?	____	____
6. As an instructor, do you pay attention to "principles of instruction," such as: (a) explicit instructions, (b) material broken into short segments, (c) frequent practice, (d) knowledge of results, and (e) positive reinforcement?	____	____
7. Is your course organized so that students can proceed with a minimum of reliance on you for direction?	____	____
8. Do you believe that most (or all) students can master the course if they are given enough time and appropriate instruction?	____	____
9. Do you make provision for students to "quest" or to move out on their own and personally devise objectives, learning activities, and resources--both individually and in groups?	____	____
10. Do you provide for students to direct some group learning activities?	____	____

GLOSSARY OF TERMS

Accountability - Accountability implies the accepted responsibility for the outcome of a process or event. Specifically, the accountable instructor is one who is willing to set objectives for student learning and then measure his effectiveness against the attainment of those objectives by the students.

Behavioral Objectives - A behavioral objective is a specific statement of the behavior that a student should exhibit at the end of the instructional period. It usually consists of three elements: (1) desired behavior (e.g.,compute simple addition problems); (2) performance standard (e.g., 9 out of 10 items correct); and (3) conditions under which behavior and standard will be required (e.g., when given a paper and pencil test).

Bloom's Taxonomy - Bloom's taxonomy is the classification system developed by Benjamin Bloom for categorizing instructional objectives. There are 6 major categories listed in order of increasing complexity: knowledge, comprehension, application, analysis, synthesis, and evaluation.

Competency Level - Competency level is that level at which a student is considered to possess the skill or knowledge necessary for achievement of a particular objective.

Contract Grading - Contract grading is that process whereby a grade is negotiated between an instructor and a student. A statement of what the student will do to achieve what grade is then written and agreed upon by both student and instructor.

Criteria Referenced - Criteria referenced refers to testing which measures a student's performance with respect to an established criterion or performance standard. This particular approach is contrasted against norm or referenced testing in which a student's level of performance is ascertained through comparison to the performance of other students.

Learning Modes - Assumption: not every student learns best through the same experiential or didactic (communication exchange) process. Some students learn best from lectures, others from discussion, others from reading, others through discovery, and others through practice--trial and error. A learning mode refers to any number of processes through which a person changes his behavior.

Performance Objectives - Performance objectives are objectives of which the outcome is the performance of a particular task.

Prerequisite Skills - A skill which needs to be mastered prior to the learning of a new skill.

Individualized Instruction Checklist
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Pre-Test - A pre-test is a test given at the beginning of a course or unit of instruction designed to determine a student's knowledge of the subject matter in the course or unit to be studied.

Unit Objectives - Unit objectives are a related set of objectives which when taken will culminate in the learning of a particular skill, concept, or idea.

_____
Name of Faculty Member

_____
College

_____ _____
Date

FACULTY TEACHING INFORMATION FORM

Directions: Please complete the items below. List each course taught. List separately each section of a course, if you teach multiple sections.

Name of Courses Taught	No. of Students in the Class
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

My teaching responsibilities are:

_____1. Exclusively with Non-Developmental Students.

_____2. Primarily with Non-Developmental Students.

_____3. Equally divided between Non-Developmental and Developmental Students.

_____4. Primarily with Developmental Students.

_____5. Exclusively with Developmental Students.

Name _____

Course _____

School _____

CREATING AN ENVIRONMENT FOR LEARNING:

PERSONALIZED SYSTEMATIC INSTRUCTION INVENTORY

Developed by

Barbara P. Washburn and Oscar G. Mink

DIRECTIONS: Please respond to each of the following statements by circling the number from 0 to 5 which most accurately represents your instructional practice where:

0 = NOT AT ALL
1 = TO A VERY LITTLE EXTENT
2 = TO A LITTLE EXTENT
3 = TO SOME EXTENT
4 = TO A GREAT EXTENT
5 = TO A VERY GREAT EXTENT

Factor 1: SELF-PACING FEATURE

Accommodation of Students' Previous Learning and Student Learning Rates

1.	Students have the option of taking a comprehensive course exam if they feel that they have sufficient skills to be exempted from the course.	0	1	2	3	4	5
2.	A diagnostic pretest is given on unit objectives to determine a student's present achievement level.	0	1	2	3	4	5
3.	Based upon pretest results, a student may be exempted from a portion of the unit objectives or an entire unit.	0	1	2	3	4	5
4.	Evaluation results are reported according to objectives mastered at a competency level rather than as an average letter or number grade, e.g., correctly solving nine out of ten algebraic equations with one unknown.	0	1	2	3	4	5
5.	For each unit there is an established standard or level of mastery of acceptable learner performance on the objectives that must be met before a student can move on to the next instructional unit.	0	1	2	3	4	5

Page 2
P.S.I.

0 = not at all
1 = to a very little extent
2 = to a little extent
3 = to some extent
4 = to a great extent
5 = to a very great extent

6. Criteria referenced mastery levels may be negotiated and modified through instructor-student negotiations. (Pertains to one or more course grades--A,B, or C level.)	0	1	2	3	4	5
7. Students are tested on necessary prerequisite knowledge and skills and are provided materials and instruction necessary to remedy deficiencies.	0	1	2	3	4	5
8. There is an opportunity for a student to evaluate his own achievement of objectives through self-testing, feedback, and self-correction of errors.	0	1	2	3	4	5
9. Students are given the option of taking course tests at different times.	0	1	2	3	4	5
10. Students are allowed to restudy unmastered course objectives and retake tests to attain mastery.	0	1	2	3	4	5
11. There are at least three different tests or methods to measure each objective.	0	1	2	3	4	5
12. Students may receive an "in progress" or "incomplete" grade at the end of the institutional grading period and be allowed to continue working into a succeeding term to master course objectives.	0	1	2	3	4	5
13. Students may complete a course prior to the end of the instructional grading period.	0	1	2	3	4	5
14. Provision is made for individual differences in student self-direction, student self-initiative, and student self-responsibility.	0	1	2	3	4	5
15. The college's instructional system is designed to eliminate failing grades.	0	1	2	3	4	5
16. The student receives no grade until he has mastered the objectives.	0	1	2	3	4	5
17. If necessary, students may spend at least a year studying a semester's course.	0	1	2	3	4	5
18. If a student finished a course early, he is able to move immediately into the next course in the sequence or into another course of his choosing.	0	1	2	3	4	5
19. Academic policy permits a student to "test out" of all or part of the course through pretesting.	0	1	2	3	4	5
20. The course is organized so that students can proceed with a minimum of reliance on the instructor for direction.	0	1	2	3	4	5

Page 3
P.S.I.I.

0 = not at all
1 = to a very little extent
2 = to a little extent
3 = to some extent
4 = to a great extent
5 = to a very great extent

Factor 2: RELEVANCE

Student Awareness of and Involvement in Determing and Achieving Course Objectives

21.	Course goals communicating major conceptual and behavioral outcomes are provided in writing for the students at the beginning of the course.	0	1	2	3	4	5
22.	After consultation with students, behaviorally stated end-of-course (terminal) objectives are communicated in writing to the students.	0	1	2	3	4	5
23.	After consultation with students, behaviorally stated unit objectives are developed and shared with the students in writing.	0	1	2	3	4	5
24.	Objectives are written in at least two of the following domains: cognitive (mental skills), affective (feelings or attitudes), psychomotor (manaul skills).	0	1	2	3	4	5
25.	Instruction includes activities designed to improve interpersonal relationship skills of students.	0	1	2	3	4	5
26.	The instructor builds process exercises (interpersonal skill development) into the course.	0	1	2	3	4	5
27.	Students are given opportunities to manage some group learning activities.	0	1	2	3	4	5

Factor 3: LEARNING CLIMATE

Students Have Choice of Learning Strategies and Are Given Accurate Feedback

28.	More than fifty percent of the course objectives have two or more learning activities--e.g., lectures, readings, slide/tape presentations--available to the students to aid them in mastering course objectives.	0	1	2	3	4	5
29.	Instructional materials are portable.	0	1	2	3	4	5
30.	Students are given explicit instructions.	0	1	2	3	4	5
31.	Course material is broken in to short segments.	0	1	2	3	4	5
32.	Opportunity is given in the classroom or the laboratory for frequent practice.	0	1	2	3	4	5
33.	Students are provided immediate feedback or knowledge of results of learning attempts.	0	1	2	3	4	5

Page 4
P.S.I.I.

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34.	Students are provided positive reinforcers for mastery of objectives or subcomponents thereof.	0	1	2	3	4	5

Factor 4: INSTRUCTOR PROVIDES SUPPORTIVE CLIMATE

Relevance of Course Design and Content to Student Needs

35.	Alternate assessment methods such as oral exams, performance tests, situational tests, observations, behavioral checklists or self-reports may be employed in addition to or in lieu of paper and pencil tests.	0	1	2	3	4	5
36.	In addition to lecture, discussion and readings other group learning activities are employed, e.g., resource persons, audio-tutorial methods, films, role plays, games, field projects.	0	1	2	3	4	5
37.	Effort is made to assist students in relating course content to future student goals and interests, such as careers.	0	1	2	3	4	5
38.	Instructor believes that most (or all) students can master the course if they are given enough time and appropriate instruction.	0	1	2	3	4	5
39.	Although the instructor creates a learning environment permitting free exploration and pacing, environmental limits (how many learning options, or limits on availability of materials) are made clear at the beginning of the course.	0	1	2	3	4	5

Factor 5: STUDENT PERSONHOOD DEVELOPMENT

Facilitating a Positive Self-Concept

40.	Students are encouraged to "make friends" and to assist each other.	0	1	2	3	4	5
41.	Vocational counseling and standardized testing are available to students on a referral or self-refferal basis.	0	1	2	3	4	5
42.	Academic counseling, including development of study skills is available to students on a referral or self-refferal basis.	0	1	2	3	4	5
43.	Instructor consults with counselors about student needs on a regular basis.	0	1	2	3	4	5
44.	Students may enroll in a separate course on "How to Study."	0	1	2	3	4	5
45.	Instructor uses counselors as curriculum and instructional consultants.	0	1	2	3	4	5

0 = not at all
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5 = to a very great extent

46.	Instructor uses peer tutors.	0	1	2	3	4	5
47.	Student development of a positive self-concept is stressed.	0	1	2	3	4	5
48.	I actively work to help each student to believe that s/he can control the "payoffs" (outcomes) in his/her academic life.	0	1	2	3	4	5
49.	I work to encourage students to experience success.	0	1	2	3	4	5
50.	I work to encourage students to develop a success expectancy.	0	1	2	3	4	5
51.	I encourage my students to recognize and accept personal responsibility for success and failure.	0	1	2	3	4	5
52.	I encourage my students to believe that success is more a result of hard work than good luck.	0	1	2	3	4	5

Factor 6: COURSE DESIGN AND REVISION

Student Feedback Is Considered Critical to Course Development

53.	There is information gathered concerning the student's opinion of the content of the course which is used in revising course content.	0	1	2	3	4	5
54.	New information regarding course subject matter is used in revising the course content at least every two years.	0	1	2	3	4	5
55.	Information is gathered on the student's opinion of the methods of instruction employed in the course which is used in revising instructional activities.	0	1	2	3	4	5
56.	Students who wish to go beyond required criteria on certain units or chapters may do so.	0	1	2	3	4	5
57.	Students may select other options such as building new units or functioning as resource personnel and/or peer tutors.	0	1	2	3	4	5
58.	Student input of topics for subject content is included in the course design.	0	1	2	3	4	5
59.	Students are allowed to help formulate the operation of the course objectives by designing and directing some learning activities or sessions.	0	1	2	3	4	5
60.	Instructor makes provision for students to "quest" or to move out on their own and personally devise objectives, learning activities, and resources--both individually and in groups.	0	1	2	3	4	5

Page 7
P.S.I.I.

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Factor 7: FLEXIBLE PROGRESS

Student Practice and Achievement of Learning Objectives

61.	The learning activities are sequenced from simple to complex.	0	1	2	3	4	5
62.	The objectives are appropriate to the current learning level or competencies of the individual student as well as to the level of his particular sub-group in the target population. (Students are able to learn what they are asked to do).	0	1	2	3	4	5
63.	Learning activities provide for frequent practice and active participation by students in the learning process. (Students may learn by doing).	0	1	2	3	4	5
64.	Students are allowed as much time as possible to master a topic.	0	1	2	3	4	5
65.	Learning activities are appropriate to the complexity (level) and nature (cognitive domain or affective domain) of course objectives.	0	1	2	3	4	5

Factor 8: STUDENT CONTRACTS

Students May Contract for Course Achievement Levels

66.	Students have a choice as to the content "their" course will contain by being allowed to contract with the instructor for mutually agreed upon objectives. (Choices are available at grade levels A and B.)	0	1	2	3	4	5
67.	A general atmosphere of freedom (self-direction) for the students prevails in the classroom.	0	1	2	3	4	5
68.	Students may select learning options.	0	1	2	3	4	5
69.	Students may negotiate learning contracts.	0	1	2	3	4	5
70.	Studnets may suggest learning experiences.	0	1	2	3	4	5
71.	The student is able to contract for the grade for which he wishes to strive, e.g., A, B, or C.	0	1	2	3	4	5
72.	Contract renegotiation upward or downward is acceptable.	0	1	2	3	4	5

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P.S.I.I.

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Factor 9: STUDENT LEARNING STYLES

Variation is Possible in the Amount and Type of Student Involvement With Course Content

73.	At least fifty percent of the specific course objectives in the cognitive domain involve more than student comprehension of subject content, e.g., interpretation, extrapolation, application, analysis, synthesis, and evaluation. (See Bloom's taxonomy).	0	1	2	3	4	5
74.	Test items are developed from the stated course objectives.	0	1	2	3	4	5
75.	Prerequisite skill checklists are made available to the students for the course.	0	1	2	3	4	5
76.	Students know what competencies they must bring to the course in order to do the work of the course.	0	1	2	3	4	5
77.	Prior to the formal evaluation situation, learning activiites allow for students to practice in a variety of modes in order to achieve the stated unit objectives.	0	1	2	3	4	5
78.	Students are given a "rationale" or told "how" the course is important to them.	0	1	2	3	4	5
79.	Students may determine where, when and how to use the instructional materials.	0	1	2	3	4	5
80.	Students may take tests for my units through the testing center.	0	1	2	3	4	5

Factor 10: FACULTY SELF-IMAGE

Instructor Perceptions of Role in the Learning Environment

81.	As an instructor I am a diagnostician.	0	1	2	3	4	5
82.	As an instructor I am a motivator.	0	1	2	3	4	5
83.	As an instructor I am a tutor.	0	1	2	3	4	5
84.	As an instructor I am a manager of learning.	0	1	2	3	4	5
85.	As an instructor I am willing to share accountability for learning with the students.	0	1	2	3	4	5
86.	The student can control the information flow and repeat any portion not understood.	0	1	2	3	4	5
87.	I use the testing center personnel as consultants.	0	1	2	3	4	5

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P.S.I.I.

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5 = to a very great extent

88. I consult with audio-visual specialists regarding production and review of alternate learning materials.	0	1	2	3	4	5
89. Materials I have developed are made available to students through the learning resource center.	0	1	2	3	4	5
90. I consult with instructional development specialists on a regular basis.	0	1	2	3	4	5

THE UNIVERSITY OF TEXAS AT AUSTIN
COLLEGE OF EDUCATION
AUSTIN, TEXAS 78712

Community College Education Research
Education Building Room 310

SELECTED PUBLICATIONS AND REPRINTS

Title	Cost
1. "Counseling for Internality" by John E. Roueche and Oscar G. Mink, 1976.	$1.90
2. "Toward Personhood Development in the Community College" by John E. Roueche and Oscar G. Mink, Community College Review March, 1976, 40-50.	1.30
3. "Creating an Environment for Learning" by John E. Roueche. Community and Junior College Journal, March, 1976, 48-51.	.65
4. "Internality Approach to Organizing Learning Groups in the Community College Classroom" by Oscar G. Mink, 1976.	1.70
5. "Introduction to Locus of Control" by Catherine A. Christner, 1974.	.94
6. "The Adult Form of the Nowicki-Strickland Internal-External Scale (ANSIE)" by Catherine A. Christner, 1974.	.80
7. "The Relationship Between Anxiety and Locus of Control" by Catherine A. Christner, 1974.	2.40
8. "Research on Counseling Strategies for Underachieving Students" by Gordon E. Watts, 1974.	.80
9. "Creating an Environment for Learning: Personalized Systematic Instruction Inventory" by Barbara P. Washburn and Oscar G. Mink, 1977.	1.45
10. "Pilot Study at Austin Community College" by Oscar G. Mink and Michael P. Abbott, 1974	.55
11. "Pilot Study on Advancement Studies Program, Southeastern Community College, Whiteville, North Carolina, School Year 1972-73" by Oscar G. Mink, 1973.	.55
12. "Reality Therapy and Personalized Instruction: A Success Story" by Oscar G. Mink and Gordon E. Watts, 1974. Community College Research Quarterly, 1977.	.90

13. "The Impact of Counseling and Instruction on High Risk Youth" Final Report for the National Institute of Mental Health funded research grant, 1973-1976. Also available through ERIC Document Reproduction Service Computer Microfilm International Corp. P.O. Box 190, Arlington, Virginia, 22210.
ED 133000 Hard Copy $14.05
Microfiche .83*

14. Improving Student Motivation: Locus of Control and Success Expectancy (A Self Study Unit) by John E. Roueche and Oscar G. Mink, 1976. Available from Sterling Swift Publishers, P.O. Box 188, Manchaca, TX 78652. 2.95

15. Assessing Student Opinions of the Learning Experience: An Instrument Packet by John E. Roueche, Barbara P. Washburn, and Oscar G. Mink, 1976. Available through Sterling Swift Publishers, P.O. Box 188, Manchaca, TX 78652. 2.95

16. Confronting Student Attitudes: A Self Instructional Unit for Teachers by John E. Roueche, Barbara P. Washburn, Oscar G. Mink, 1976. Available from Sterling Swift Publishers, P.O. Box 188, Manchaca, TX 78652. 2.95

17. The Reality Therapy Process and Counseling for Internality: A Self Instructional Work book by Oscar G. Mink and Barbara P. Washburn-Mink. Available from Organization and Human Resource Development Associates, Inc., 4105 Medical Parkway, Austin, TX 78756. 10.00

18. "The Mental Health Associate: Perspective and Promise" by Oscar G. Mink, Juan Armendariz, Ruth Shaw, and Jerry Snow. 1975. 4.95

19. Developmental Education: A Primer for Program Planning and Evaluation by John E. Roueche and Suanne D. Roueche. Available from the Southern Regional Education Board, 130 Sixth Street N.W., Atlanta, GA 30313. 1977. 2.50

20. Overcoming Learning Problems, John E. Roueche and Jerry J. Snow, 1977. Available from Jossey Bass Publishers, 615 Montgomery San Francisco, CA 94111. 8.95

21. "An Open Systems Model" by Oscar G. Mink and Jim Schultz, 1974. .55

22. "Opens Systems in Theory and Practice: or Democratizing our Institutions and Organizations is the Key to Survival" by Oscar G. Mink and L.R. Mobley, 1975. 1.25

23. "Reality Therapy in Learning Groups" by Oscar G. Mink, 1974. 1.60

*Not available at the Univeristy of Texas

Selected Publications and Reprints
Page 3

24. "Learner-Oriented Instruction" by Oscar G. Mink, Journal of Rehabilitation, July-August, 1971, 25-27. .85

25. "Control Expectancy and Learning for Mastery in Teaching for Work Adjustment with the Socially Disadvantaged" by Oscar G. Mink, 1971. 1.35

26. "Comparison of the Effects of Behaviorally Oriented Action and Psychotherapy Reeducation on Introversion-Extraversion, Emotionality, and Internal-External Control" by P.S. Dua Journal of Counseling Psychology, 1970, 17, 567-572. 1.15

27. "Internal-External Locus of Control Change Techniques" by A.P. MacDonald, Jr., Rehabilitation Literature, 1972 33, (2) 44-47. 1.20

28. "The Role of Expectancy in Rehabilitation: Suggested Remedies" by A.P. MacDonald, Jr., and Ranjit K. Majumber, 1971. .90

29. "Counseling Techniques Tested" by R.K. Majumber, K.B. Greever, P.R. Holt, and B.U. Friedland, Journal of Rehabilitation, September-October, 1973, 19-22. 1.00

30. "Treatment of 'Adolescent Rebellion' by the Reconstrual of Stimuli" by John C. Masters, Journal of Consulting and Clinical Psychology, 35 (2) 213-216, 1970. .90

31. "Effects of Counseling and Achievement Motivation Training on Locus of Reinforcement Control" by G. Reimanis and M. Schaefer EPA, Atlantic City, 1970. .80

32. "Summary of Implications for Therapeutic Practice" Excerpts from "Some Implications of Social Learning Theory for the Practice of Psychotherapy." by Julian B. Rotter, 1972. .75

33. "Internal Versus External Locus of Control Chagnes with Human Relations Training Participants" by Gerald D. Williams, 1970. .65

34. "Instrumental and Terminal Values: Some New Developments" by A.P. MacDonald, Jr., JSAS, Catalogue of Selected Documents in Psychology, 4, 123 (Ms. #767), 1974. 1.80

35. "Notes on Internal-External Locus of Control Change Techniques" by Oscar G. Mink. Includes Dua, Masters Reimanis, Schaefer. (Mimeographed) 1974. .55

Selected Publications and Reprints
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36. "What Works and What Doesn't in Community College Developmental Studies Programs" by Jerry Snow and Ann Linquist, 1977. 1.90

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